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NOTICE

The present volume of the TRANSACTIONS has been issued in two numbers representing the papers read from January to December, 1936, before the College and its Sections. While a few of the papers have been presented in full, most of the Proceedings are in abstract or by title only, giving when possible the reference to place of complete publication.

The College holds itself in no way responsible for the statements or opinions set forth in the various papers or abstracts in its TRANSACTIONS.

Edited by

THOMAS FITZ-HUGH, JR., M.D.

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January 2

THE NATHAN LEWIS HATFIELD LECTURE, XIV

First Paper

Growth and Behavior of Peripheral Blood Vessels

By ELIOT R. CLARK, M.D.

(*Abstract*)

The growth and behavior of peripheral blood vessels have been studied by long-continued microscopic observations of living vessels as seen in double-walled transparent chambers installed in the rabbit's ear, by a method developed in this laboratory, with the following results:

The endothelium of new blood vessels is formed by the sending out of sprouts from the endothelium of preexisting blood vessels. The capacity for new growth of capillaries is apparently unlimited—a single capillary or venule sometimes sending out many sprouts. The physical and chemical conditions which control sprout formation have not yet been completely established. The rate of extension of a new capillary plexus varies greatly according to conditions. It may reach as high a figure as 0.6 mm. per 24 hours. Endothelium possesses also the capacity for retrogression. Thus, in a rapidly growing plexus, at least four out of five of the new capillaries which have formed may retrogress, either by retraction or by dissolution of endothelium. There is no evidence that endothelium ever gives rise to any other type of cell.

Extra-endothelial cells appear very early—often before circulation in a new capillary has become established. Their source is not the endothelial cells but the surrounding fibroblasts or cells present outside the endothelium on preexisting vessels. At first they are sparsely distributed. Their original number may remain unchanged for many days, or it may increase so rapidly that a continuous layer of outside cells may form within six days. This variation undoubtedly represents a reaction to circulatory con-

ditions—chiefly to blood pressure—for the larger number of cells is always found on the arteriolar side of the plexus. Extra-endothelial cells are, at first, arranged with their long axis parallel to that of the blood-vessel, but this arrangement may change rapidly so that their axis is perpendicular to the blood vessel. Such a change always occurs on the arteriole. Like endothelial cells, the outside cells may atrophy and disappear, apparently in response to diminution in circulation with lowered pressure.

As regards control of blood flow, while capillaries and venules may grow larger or smaller in diameter depending upon blood flow, there is no evidence that mammalian endothelium, as exemplified by the vessels in the ear of the rabbit or dog, possesses the capacity for contraction and dilatation. Equally non-contractile are the adventitial cells on capillaries and small venules. The control is exercised by the extra-endothelial cells on arteries, arterioles and some of the larger veins, and is due to the activity of cells which have differentiated to smooth muscle cells. The functioning of the latter, however, is largely dependent upon the growth of nerves. Since new growth of nerves is much slower and more sporadic than that of blood vessels, many newly formed arterioles never receive a nerve supply and remain relatively inactive. We have seen development of active contraction, with concomitant growth of nerve, in an arteriole which had been a newly formed capillary nine days earlier, and we have seen definite contractility develop as late as eight months after the formation of an arteriole, while in numerous instances arterioles have failed to receive a nerve supply even after a year of observation.

Direct connections between arteries and veins larger than capillaries—true arterio-venous anastomoses—are present in large numbers in the normal ear of the rabbit, and it has been possible to observe their new formation and to determine some of the factors which regulate their development and maintenance.

The arteries and arterio-venous anastomoses of the rabbit's ear are extraordinarily active. They show periodic—2 or 3 times per minute—synchronized contractions and dilatations; tend to become wider or narrower in response to mild heating or cooling; and show a rapid narrowing, in reaction to anything which startles the rabbit such as a noise or prodding the animal. But there is also much independent contraction and dilatation of individual arteries, arterioles and especially of arterio-venous anastomoses.

the result of which is often a reversal of direction of blood flow in parts of the plexus.

Regarding its function in relation to interchange of substances, there is evidence that blood-vessel endothelium undergoes changes in consistency, evidenced by progressive leucocyte sticking, leucocyte emigration, localized bulgings and breaks with ecchymoses, and finally disintegration. These changes are undoubtedly accompanied by changes in permeability.

Altogether the most impressive characteristic of the peripheral vascular system is its extraordinary lability as regards growth and consistency of endothelium.

This paper is based on the results of the activity of a group of investigators in this laboratory whose names appear in the references given below.

Two reels of motion-pictures, for which we are indebted to Dr. E. A. Swenson, were shown. One reel showed new sprouts and circulation in newly formed blood vessels, and the effects of cold on the peripheral circulation; the other illustrated contraction of arteries and of arteriovenous anastomoses.

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Second Paper

Observations on the Diagnosis and Treatment of Peripheral Vascular Disease in Man

By EUGENE M. LANDIS, M.D.

(*Abstract*)

In recent years there has been considerable interest in the pathological physiology of peripheral vascular disease—involving objective and semi-quantitative study of clinical manifestations with attempts to explain the mechanism by which the symptoms and signs of peripheral ischemia are produced. The factors responsible for directing study into this channel are: (1) increasing knowledge of normal vascular physiology, (2) the development of simple thermo-electric methods of measuring skin temperature, and (3) advances in the surgery of the sympathetic nervous system. Material, methods and stimulus being available, the rapid accumulation of information is not surprising.

It must be remembered, however, that little or nothing is known concerning the fundamental etiology of the more important peripheral vascular diseases. Familiarity with their abnormal physiology makes it possible to ameliorate signs and symptoms to some degree, but completely successful therapy is lacking and still awaits discovery of the underlying causal agents.

The symptoms and signs of the common peripheral vascular diseases are those of ischemia: coldness, cyanosis, pain, indolent ulceration and eventually necrosis. For diagnosis, prognosis and effective therapy, it is essential to divide patients into two groups, (*a*) those whose symptoms are due to vascular spasm with no, or at least only slight, organic vascular occlusion, and (*b*) those whose symptoms are due primarily to advanced organic disease of the arteries. In the clinic changes in peripheral blood flow can be followed qualitatively by measuring skin temperature while vasodilatation is being induced by anesthetization of peripheral nerves, by general or spinal anesthesia, by paravertebral sympathetic block or by warming the body. When vasoconstrictor tone is thus reduced, vasodilatation and increased blood flow elevate the skin temperature of the digits to 30.5°C. or more. Ischemic symptoms

associated with such a normal vasodilator response must be ascribed to excessive spasm, observed typically in Raynaud's disease and in acrocyanosis.

The organic occlusive vascular diseases are associated with an impaired vasodilator response. In these conditions when the skin temperature during vasodilatation rises to 26°C. or more, considerable symptomatic benefit may be expected from contrast baths, local heat, diathermy, vasodilator drugs, the thermo-regulated cradle or sympathetic ganglionectomy, all of which increase blood flow temporarily or permanently by dilating those vessels still capable of expansion.

In the late stages of the organic peripheral vascular diseases the arteries become rigid, because of structural changes in their walls, and no vasodilator response can be elicited. In these patients the therapeutic procedures mentioned above usually fail to improve the nutrition of the tissues in the extremity. In treating this group alternate suction and pressure may be of some benefit. In a series of seventy-five patients with advanced organic peripheral vascular disease good immediate results were obtained in 51 per cent., fair results in 13 per cent. and poor results in 36 per cent.

Of considerable clinical importance is the persistence of improvement in a limited number of patients over periods of six to twenty-two months after conclusion of active conservative treatment. In 50 per cent. of those studied the vasodilator response increased significantly, indicating that collateral blood flow can exhibit considerable increase. It is, therefore, justifiable to temporize when treating crises of rest pain arising from embolism, thrombosis or indolent ulceration without spreading infection.

Suction and pressure therapy has definite limitations and dangers. It is absolutely contraindicated in patients with phlebitis or with the slightest evidence of spreading infection. Lesions, even the most indolent, must be examined daily so that any spreading infection may be detected immediately. The therapy should be applied under the direct supervision of a physician. Suction and pressure has not been of lasting service in peripheral vascular disease complicated by osteomyelitis, deeply extending gangrene or large sloughs. These patients present mechanical obstacles to healing which require surgery for effective treatment.

BENIGN GLANDULAR TUMORS OF THE BRONCHUS *

By LOUIS H. CLERF, M.D. and BAXTER L. CRAWFORD, M.D.

(*Abstract*)

In a study of our cases of bronchial neoplasms we encountered a number with definite tumors producing bronchial obstruction. These were considered to be malignant from the biopsy studies but subsequent developments proved them to be clinically benign. The problem arose as to how these could be recognized as benign growths because of the importance of the prognosis and treatment and particularly in view of the fact that in our experience the mortality rate in cases of infiltrating carcinoma of the bronchus has been one hundred per cent. With this in mind we began a systematic study of these cases from both a clinical and pathological standpoint. It would appear that this type of growth is a distinct entity and that by careful study of the clinical and bronchoscopic aspects as well as the histologic structure of the growth a majority could be recognized and differentiated from carcinoma.

A group of 17 cases has been studied. There were 8 males and 9 females. The ages varied, 5 being between 21 and 27 years, and one, 61 years of age. Nine were over 40 years. The growth commonly occurred in one of the larger bronchi. In 5 instances the tumor was in the right bronchus, whereas in 12 it was found in the left bronchus. In 9, the tumor involved a lower lobe bronchus. The growth is usually sessile, being attached quite firmly to the bronchial wall by a broad base. It does not infiltrate the bronchial wall nor is there observed fixation of the bronchus, as is commonly seen in carcinoma. The surface, which is usually covered by bronchial mucosa, may be ulcerated, dependent upon the extent of the associated inflammation and infection.

The clinical findings were not constant. In a general way the symptoms were those commonly observed in bronchial obstruction. In cases with slight obstruction a wheeze was often present. Cough, when present in these cases, was usually unproductive.

* Read February 5, 1936.

The cases with marked bronchial obstruction exhibited the clinical findings of extensive pulmonary suppuration, particularly bronchiectasis. In a number of instances there was hemoptysis varying from slight streaking to rather large hemorrhages.

The roentgen findings varied from obstructive emphysema involving a lobe or an entire lung to obstructive atelectasis with or without bronchiectasis. In a number of cases the instillation of iodized oil revealed very marked bronchiectasis.

The treatment employed in these cases varied. In the earlier group when it was believed that we were dealing with adenocarcinoma deep roentgen therapy together with electro-coagulation of the growth was the rule. When it was concluded that these growths were probably nonmalignant we resorted to electrocoagulation only. Later, a small growth, removed completely at bronchoscopy in order to secure adequate tissue for biopsy, failed to recur. Since then the plan of treatment has consisted of removal bronchoscopically, employing the tip of the bronchoscope and forceps. This seems to have been adequate in those cases where the growth is located in a large bronchus that could be explored bronchoscopically. In one case, a growth in the left upper lobe bronchus, neither fulguration nor instrumental removal could be carried out. This patient was given deep x-ray therapy only. So far as could be ascertained the growth failed to respond. The patient died subsequently of cardio-vascular disease. At autopsy the growth was found to extend towards the periphery of the upper lobe, but there was no evidence of infiltration.

There are also histologic characteristics which may be recognized from properly prepared and carefully studied biopsy material. The cell type varies, but the growth is usually composed of a columnar or transitional type of epithelium, which frequently forms acini and a pseudo-roseate arrangement. The cells are often degenerated and distorted with pyknotic changes in the nuclei, resulting from pressure and inflammation. The bronchial mucosa usually covers the growth without any evidence of connection between the epithelium of the mucosa and that of the growth. The structure of many of these lesions suggests mucous gland origin.

In a few of the cases where the growth could not be removed bronchoscopically, we were able to observe them for a period of many years. The growth remained within the bronchus and did not infiltrate the surrounding tissue. It produced bronchial obstruction and associated pulmonary suppuration.

It is often impossible to differentiate from the histologic structure alone between this benign tumor and carcinoma, but when the clinical and bronchoscopic manifestations are considered together with the histologic structure, its benign nature should be recognized. Because of the clinical behavior of these cases and the peculiar histologic structure of the growths, we consider that they constitute a definite clinical entity. The question of nomenclature is important. We do not believe that these tumors should be classified as simple adenomas, but that probably some descriptive term as "benign glandular bronchogenic tumor" is preferable.

EVALUATION OF MERCURIAL ANTISEPTICS IN THE PRESENCE OF SERUM *

By DOROTHEA E. SMITH, E. J. CZARNETZKY
and STUART MUDD, M.D.

(*Abstract*)

Several mercurial antiseptics have been compared for their germicidal action in saline and in 80 per cent. serum. An accurate method of plating has been used, and the time and concentration required for 50 per cent. killing of a culture of smooth *Bacterium typhosum* has been taken as a basis of comparison.

Metaphen, merthiolate, mercurochrome and bichloride of mercury all combine with serum proteins. When maximum combination is secured the resulting compounds possess no antiseptic action. The mercury content found by analysis of the equilibrium germicide-protein compound is the same, within the limits of experimental error, for all four germicides. Equilibrium has been approached in both directions. In one case an excess of mercurial was used, and in the other an excess of serum proteins. In the latter case, the rate of combination was determined by adding the calculated amount of mercurial and noting the time when the mixture no longer possessed antiseptic action. The ratio of the rate with which the mercury of the mercurials combines with bacteria and with serum proteins is more favorable in the case of some of the mercurials than with the others. These compounds kill bacteria, then, only in proportion to their mercury content. The decrease in germicidal activity when used in serum is equal to the amount of mercury chemically combined with serum. When used in saline the killing power of the antiseptics is directly proportional to their concentration, but when used in serum the killing power is proportional only to the concentration of antiseptics not combined with the serum proteins. Approximately 0.4 gram as

* Read February 5, 1936.

mercury of any of these mercurials can be bound by one liter of normal horse serum.

It follows that the effect of serum is such that neither metaphen, merthiolate, mercurochrome, nor bichloride of mercury may be used as an intravenous antiseptic. The amount necessary to sterilize the blood stream is far in excess of what is usually considered the fatal dose of bichloride, 0.1 to 0.2 gms.

A RÉSUMÉ OF EXPERIMENTAL INVESTIGATIONS OF THE EAR *

By WALTER HUGHSON, M.D.

(*Abstract*)

Experiments designed to determine with complete accuracy the function of the various parts of the auditory end organ have been carried out during the past five years. This work was begun at the Johns Hopkins Medical School and is now being continued in an especially equipped laboratory at the Abington Memorial Hospital. This laboratory has been designed for the double purpose of doing animal experimentation and investigating deafness in human beings.

The experimental method employed consists of amplification of changes in electrical potential occurring in the auditory nerve as a result of sound stimuli impressed upon the animal's ear. Cats have been used almost exclusively, due to the similarity between the size and general relationships of its ear and that of human beings. Sound stimuli of a known frequency and intensity are used and the efficiency of any given ear determined by the response obtained as a result of such stimulation. Electrodes placed on each nerve together with a ground electrode in the muscles of the neck pick up the potential changes, and these when amplified a known amount can be used to reproduce the stimulating frequency with exact fidelity. In the same way the more complicated sound stimulus of voice is obtained in a similar manner. The response is first observed in a normal ear, and variations resulting from different experimental procedures studied. The sound stimuli used are the octaves principally concerned in human speech. All the structures of the ear have been investigated to determine their individual and collective rôle in the ear's response to air borne stimuli.

In one series of experiments it was demonstrated that fixation of the round window membrane, either with a pledget of moist

* Read February 5, 1936.

cotton or with a tissue graft, allowed to remain in place long enough to have "taken" as determined by microscopic section, invariably produced a marked increase in the efficiency of the ear. This improvement occurred both in normal ears and those in which for certain reasons the transmission was below normal.

The effect of measured changes in intralabyrinthine pressure has been determined. Contrary to general belief considerable increases in pressure have no effect whatever upon the function of the ear other than to produce a slight improvement in function. Decreased pressure on the other hand causes impairment. Changes in middle ear pressure of less than 5 mm. of mercury have no effect, while the impairment produced by greater pressure changes is essentially the same whether variation happens to be an increase or a decrease.

Of particular interest has been a study of the phenomenon of auditory fatigue. A normal ear when exposed to a sound stimulus of high intensity always exhibits some degree of fatigue obviously depending upon the intensity used and the duration of time the tone is applied. The ear fatigues not only to the tone used but to all frequencies above it. If for instance 512 d.v. is the frequency used no specific effect will be noted, but all octaves above it will be transmitted with reduced intensity. Recovery usually takes place in from three to thirty-six hours.

It was found that under certain conditions, whether experimental or spontaneous, this fatigue effect could not be obtained no matter how intense a fatiguing tone was used. In this group were ears in which a chronic infection was present, or in which there was perforation of the drum, or when the ossicular chain was fixed by applying tension either to the tensor tympani muscle or to the stapedius tendon. In the latter case release of tension and repeated exposure to the fatiguing tone immediately produced the usual effect. On the other hand division of the tendons results in an extreme degree of fatigue. When the round window is blocked the fatigue is greater than in the normal ear.

These fatigue experiments have been carried out on a considerable number of human beings, and the results obtained conform in every particular to the animal experiments. The use of this method as an adjunct to routine clinical tests used in the diagnosis of deafness immediately suggests itself. There is a definite number of individuals with impaired hearing who exhibit no gross con-

dition which could be responsible for the loss. Impaired function of either intrinsic muscle, such as a spastic contraction, would reduce auditory acuity and at the same time interfere with ability to fatigue the ear.

At the present time experiments are being carried out to determine what effect experimental changes and spontaneous pathology will have upon bone conduction. It is felt that this study will add greatly to the value of the data already obtained. It has been found impossible to fatigue the ear either of an experimental animal or of a human being in reasonable limits of time by bone conduction, even though the stimulus is of such intensity as to produce a definite vertigo.

Clinical application of the results obtained will depend, of course, upon the development of a technic which may be employed with a minimum of risk and with reasonable promise of relief.

March 4

MARY SCOTT NEWBOLD LECTURE, XXXVI

First Paper

The Clinical Aspects of Modern Endocrinology of the Female

By FRANKLIN L. PAYNE, M.D.

(*Abstract*)

The rhythmic hormonal changes which result in menstruation are described in detail. The endocrine alterations which accompany pregnancy are considered, and the origins of the various commercial female endocrinologic products are discussed.

Amenorrhea and oligomenorrhea are symptoms of deficient production of estrin in only half of the cases. In the remainder, faulty ovarian rhythm is responsible. The clinical assumption that amenorrhea usually results from abnormal ovarian stimulation of the anterior pituitary lobe cannot be proven because of the present lack of facilities for quantitative analysis of anterior lobe activity. Hypothyroidism is a common accompaniment of amenorrhea. In treatment, estrin therapy is indicated only when deficient ovarian secretion has been demonstrated by quantitative determinations. The cautious adminstration of thyroid substance is advisable. In the presence of normal production of estrin, but abnormal ovarian rhythm, small doses of irradiation are indicated.

Functional uterine hemorrhage is the result of either defective anterior lobe stimulation or abnormal response of the ovaries and endometrium to this hormone. Excessive estrin secretion is present in approximately one-half of the cases. Hypothyroidism is a frequent accompaniment. The hormonal treatment consists of the judicious use of thyroid substance and of the anterior pituitary-like substance. Three-fourths of the patients from adolescence to 35 years of age will respond satisfactorily. Hormone therapy is useless in pre-menopausal bleeding.

Functional dysmenorrhea is usually accompanied by a deficiency in the ovarian hormone and rarely, if ever, by an excess. Prolan therapy has proven useless. Following the use of the estrogenic hormone, in combination with thyroid gland and general hygenic measures, the periods become much less painful or entirely painless in one-half the cases.

Infertility, functional in origin, is very common with irregular menstruation, and it is occasionally associated with regular periods. Menstruation without ovulation is now an accepted fact. Adequate estrin secretion occurs in two-thirds of the patients with functional sterility, and the remaining one-third is divided about equally between hypo- and hyperestrinism. Identification of the luteal hormone is possible only by regular, periodic study of the endometrium. Failure of the premenstrual endometrial change to develop indicates absence of ovulation and the lack of the corpus luteum secretion, under which circumstances pregnancy is an impossibility. No commercial hormone product will correct this condition.

The hormonal diagnosis of pregnancy is 98.7 per cent. accurate when the Friedman test is used. Quantitative determinations, based upon the twenty-four hour urinary output, are helpful in the diagnosis of hydatidiform mole and chorion epithelioma. In mole, the elimination varies so widely that it cannot be taken as final diagnostic evidence. In chorion epithelioma, the diagnostic feature is the increasing elimination of prolan as demonstrated by repeated titrations at regular intervals.

Second Paper

Organotherapy from the Internist's Viewpoint

By L. G. ROWNTREE, M.D., Sc.D.

(*Abstract*)

Osler visited Philadelphia in 1907, and talked on "The Value of Drugs." Only thirteen, he said, could be regarded as great drugs, and these he refused to mention by name. To this group endocrinology, in my opinion, has added but four, which four I shall not say.

Despite the limitations of organotherapy, endocrinology has exercised a most stimulating influence on medicine, probably the most enlivening since Pasteur. It has provided in biology a new insight into the ways of nature; in chemistry, numerous triumphs in the recognition, isolation, purification of active principles, and, in some instances, the synthesis of hormones; and in medicine, far-reaching revelations as to the rôle, physiologically and pathologically, that the glands and hormones play in the processes of growth, development, of metabolism and nutrition, and in the field of reproduction.

In the treatment of glandular deficiencies a happy combination is essential to maximum success. This includes: (1) wisdom in the selection of a doctor, one well versed generally in medicine, metabolism and treatment, as well as familiar with clinical endocrinology and glandular products; (2) a correct diagnosis; (3) the use of potent preparations (preferably assayed); (4) proper administration (oral or parenteral); (5) with adequate dosage (determined clinically or in the laboratory); (6) with the proper timing of treatment (biologically in relation to growth, development, puberty, menses, etc.); (7) with continuation or interruption of treatment in conformity with the specific needs; (8) at a reasonable cost, one well within the means of the patient; and, finally (9) control of metabolism in the appropriate field.

Failure in organotherapy is frequent, due usually to a disregard of one or more of the considerations mentioned above. The disrepute into which it has fallen at times has resulted largely from two sources: (1) commercial exploitation, which has flooded the world with pseudo-scientific propaganda, unwarranted therapeutic claims and worthless products; and (2) medical laxness, which has permitted the treatment of vague "endocrine dyscrasias" with unindicated glandular products and the treatment of so-called pluriglandular diseases with fixed multiglandular mixtures.

Treatment of Hypothyroidism. Desiccated thyroid (or thyroxin) is of inestimable value in the treatment of cretinism and myxedema. In the former, the time of initiating treatment is crucial. Infants respond as though by magic. Treatment delayed until after five to seven years is rarely effective. Myxedema in the adult is frequently overlooked but, if recognized, controlled readily, provided sufficient thyroid is given.

Non-specifically, thyroid products may prove valuable in other conditions associated with low basal metabolism, mental depression, malnutrition, Ménière's disease, etc., as also in certain forms of obesity, sterility, complete heart block, and arthritis in elderly patients. "A pinch of thyroid" is still largely responsible for the success of many forms of organotherapy.

Treatment of Parathyroid Deficiency. Paroidin is a valuable specific in infantile and adult forms of tetany, associated with a low level of blood calcium. Its value can be greatly enhanced by the simultaneous use of a diet rich in calcium or by the administration of calcium as the lactate by mouth, the gluconate intramuscularly, or as calcium chloride intravenously. Vitamin D aids in the absorption of calcium. In difficult cases of tetany desiccated thyroid is often helpful.

Paroidin is also useful in plumbism, in liberating lead for excretion, and in parathyroid tumors at the time of their removal, for the prevention of post-operative tetany.

Treatment of Diabetes Mellitus. Insulin has entirely changed the outlook for the diabetic patient. To the moderately severe cases it brings good health; to the severe cases and those complicated with acidosis, infections, or in need of surgical intervention, it staves off death; to the young it brings vigor of life and length of years. To all diabetics it is life-saving. Insulin constitutes endocrinology's greatest gift to humanity.

Since hyperinsulinism occurs at times spontaneously, or is induced in the course of treatment of diabetes, a physician must have a thorough knowledge of the value and indications of glucose. The surgical removal of a "tumor of the Islets" may also call for insulin.

Insulin, representing one of the best assayed glandular products, is a relatively pure hormone. Perhaps purification has been carried too far. Recently protamine insulinate has been shown to have certain advantages, in that its effect upon the level of the blood sugar is more gradual and more prolonged. This may have an important bearing on the spacing of doses and be of particular benefit in difficult cases from the standpoint of treatment at night.

In addition, insulin has a non-specific value in anorexia and in certain cases of sterility and perhaps in spontaneous hypoglycemia.

Treatment of Hypopituitary States. The pituitary gland, regarded by some as the regulator of the endocrine system, abounds in hormones. Whether or not these are all actually produced in the pituitary gland is still open to question. From the anterior lobe we have the growth hormone, supposedly originating in the eosinophilic cells, and the gonadotropic hormones, from the basophilic cells, one follicle-stimulating and another luteinizing in character, and in addition, thyrotropic, diabetogenic, adrenotropic, parathyrotropic and lactogenic hormones. The pars intermedia produces a chromatophorotropic principle, and the posterior lobe pitressin, concerned with the water balance of the body, and pitocin, with uterine contraction.

Aside from those concerned with sex and growth, all of the other anterior pituitary hormones must be regarded as still in the experimental stage. The female sex hormones have been considered in this symposium by Dr. Payne. The gonadotropic hormones have some beneficial effects in Fröhlich's syndrome, if given parenterally over a long period of time, but in such cases thyroid therapy, diet and strenuous exercise are largely responsible for the favorable changes in bodily contour. The descent of the testicles is unquestionably hastened, in some instances, by anterior lobe extracts or "pregnancy urine" extracts. However, judging by personal experiences in consultation on cases of undescended testes, the testicles have already descended in approximately 50 per cent. of cases prior to any treatment. Simmond's disease is usually unaffected by organotherapy, yet occasional benefit seems to make the effort worth while. Commercially prepared growth hormones are still in a most unsatisfactory state.

The posterior lobe extract and pitressin are capable of overcoming all the cardinal symptoms of diabetes insipidus temporarily, in all but the most severe cases. The most satisfactory results are obtained by injections, but intranasal instillations of pitressin, or the "snuffing" of powdered pituitary extract are also helpful. The majority of mild cases, however, abandon routine treatment within a year or so and resort to therapy only as special needs dictate.

Adrenal Deficiency. The clinical manifestations of Addison's disease can usually be readily overcome with the cortical extracts of Swingle and Pfiffner, of Hartman and of Kendall. Interrenalin orally administered has proven helpful in the hands of

Rogoff. However, since more than 80 per cent. of the cases of Addison's disease are due to tuberculosis, the prognosis is too frequently determined by the activity of the tuberculous process. Unfortunately, no satisfactory cortical hormone preparation is to be found on the market. A high intake of sodium chloride is of unquestionable benefit. This is often unavailing, unless the cortical hormone is also employed. The Muirhead treatment is helpful in a small proportion (15 per cent.) of cases.

Through the use of these newer methods of treatment, the rôle of the doctor has changed materially in the treatment of Addison's disease. Formerly, it was a question of constant alertness in the treatment of innumerable emergencies in a desperately sick, bed-ridden patient, whereas to-day, in many cases, it is merely a question of adjustment of dosage and the intervention of protective measures in an ambulant, often euphoric patient. Increase in the amount of cortical hormone and salt are desirable in all emergencies.

Epinephrine. This represents a most effective pharmacologic agent. It has proven of great value as a local styptic in haemorrhage and when given in conjunction with local anaesthesia, and is a veritable boon at times in allergic diseases (asthma, hay fever, urticaria) and also in the control of shock. It is of value in ocular hypertension and occasionally restores life when given as an intracardiac injection in cases of sudden death.

Treatment of Pernicious Anaemia. Whipple demonstrated the value of liver feeding in secondary anaemia in dogs in 1925, and Minot and Murphy its value in pernicious anaemia in 1928. Cohn and Minot and Randolph West first prepared liver extracts in 1930. Later, Gänsslen and Castle obtained effective extracts from small amounts of liver (15 to 20 grams). The active principle is non-albuminous and contains C, H, N and O. Laland and Klen purified this so that two milligrams elicited an excellent reticular response.

In pernicious anaemia, despite clinical and haemotological improvement from liver therapy, achlorhydria persists. Castle, in 1928, clarified the rôle of the stomach and demonstrated the presence of an intrinsic factor in the gastric juice and an extrinsic factor present in certain foods. He suggested that pernicious anaemia is a deficiency disease, due to a lack of gastric hormone. Sturgis and Isaacs showed the presence of this hormone in the

pyloric end of the stomach of the hog and obtained good results in pernicious anaemia from the daily administration of 20 to 30 grams of desiccated hogs' stomach. Morris, in 1933, demonstrated the presence of the hormone in normal gastric juice and suggested for it the name "addisin," and further suggested that polycythaemia vera might result from an excess of "addisin," an idea concurred in by Baráth and Fülöp.

Many satisfactory preparations of liver, as powders or solutions, are now available; parenterally 3 cc. daily may suffice and later 3 cc. weekly. Satisfactory gastric preparations are also on the market: ventriculin, 10 to 30 grams daily, and also a product representing the active principle of both stomach and liver, extralin (1 to 3 grams, t.i.d). Immediate success has attended the use of these products.

Organotherapy, at its best, attains the highest levels of "the science of medicine" and, at its worst, plumbs the depths to become "a conjectural art" in the sense of Celsus.

April 1

THE NATHAN LEWIS HATFIELD LECTURE. XV

A Discussion of the Etiology of Cancer Based on Present Knowledge

By JAMES B. MURPHY, M.D.

(*Abstract*)

Recent advances in the knowledge of malignancy have made it clear that the development of the condition must be considered in two phases. Ewing has designated these as the causal genesis and the formal genesis. It now appears probable that the process is always started by an incitor, or what has become known as a carcinogenic agent. The chain of events initiated by these agents may lead to the development of malignant change in the cells, but once this condition is developed the carcinogenic agents play no further part in the process.

The carcinogenic agents involved in the causal genesis have received extensive study. They include physical agents, such as x-ray, radium and sunlight; chemicals, such as coal tar and its products, aniline, dibenzanthracene, phenanthrene, benzpyrene, tobacco combustion products, chloride of zinc, arsenic, etc.; organic cell products, represented by hormones, estrin, folliculin, and decomposition products of bile acids; infectious agents, illustrated by malignant changes in tuberculous and syphilitic lesions, and in virus lesions such as the Shope rabbit papilloma; animal parasites, such as bilharzia in the bladder, tapeworm cyst in the liver, nematodes in the stomach wall; and simple mechanical injury. The condition produced by these agents in locations where they may be studied is mainly a chronic local overgrowth of tissue with various grades of anaplasia. The first lesions in the skin take the form of keratosis or papilloma, which after a prolonged period may show malignant changes at the base. Once the papilloma or keratosis is started the carcinogenic agents play

no further part in the process. There seems no justification for the tendency to select any one of these agents as the universal cause of cancer, as has been done by certain investigators, for there seems nothing in common between the various groups except their action on tissues.

The nature of the formal genesis of cancer, or those changes responsible for the acquired ability of the cell for unrestrained multiplication, may be crudely deduced from what is known of the biology of the cancer cell. In general, extensive investigation has failed to show any very striking or apparently fundamental difference between the normal and malignant cell except capacity for multiplication. Mammalian tumors may be transmitted from animal to animal only within the species of origin, and this transmission is accomplished by grafts of living cells with resulting tumors formed entirely by the multiplication of the introduced cells. The cells of the host never become malignant even though they are in intimate contact with the cancer which they support and by which they are being invaded. The laws governing the transplantability of tumors are essentially the same as those limiting transplantation of normal tissues, and methods of increasing or decreasing resistance to one are equally effective with the other. There is a complete absence of any evidence of an infective agent in mammalian tumors.

The experimental study of the induced tumors resulting from the action of incitors or carcinogenic agents indicates the probability that malignancy may be induced in any organ or tissue. Therefore it would appear that malignancy is a universal cell potentiality (Ewing). That there are variations in the degree of this potentiality is demonstrated by the fact, brought out in the genetic studies, that the inherited condition is not a general susceptibility but is specific for certain organs or tissues. Mice from a family having a tendency for cancer in a specific tissue may have cancer induced in this tissue with great ease and regularity by the application of one of the carcinogenic agents. In the extreme cases the potentiality for malignancy is so high that even the strain of normal physiological processes are sufficient to set it off.

In spite of strong evidence to the contrary, the parasitic theory for cancer has been repeatedly advanced. The most recent revival brings forward a filterable virus as the universal cause of

the disease. The only evidence that this type of infective agent is associated with mammalian tumors is that a virus-induced papilloma of the rabbit under certain conditions may show malignant change. At the present the virus appears to play no further rôle than as an incitor and should therefore be classed as another carcinogenic agent to be added to the already long list of agents playing a definite part in the preliminary process. Even in the fowl tumor group, neoplasms which may be transmitted by cell-free extracts, there are well founded reasons for believing that the transmitting agents are not exogenous viruses but are agents of endogenous origin.

In formulating any hypothesis as to the nature of the formal genesis of tumor, the following facts must be taken into consideration. The cancer cell differs essentially from the normal cell only in its capacity for uncontrolled multiplication. Malignancy appears to be a universal cell potentiality in that any cell may probably become malignant under the influence of an inciting agent. The change induced by these agents is a change in the cell which becomes a fixed character not dependent on the carcinogenic agent for its continuation. Genetic studies show that the degree of malignant potentiality for any given organ or tissue is an inherited property. The fact that animals inheriting a tendency for spontaneous cancer in a specific organ show a hypersusceptible condition of this organ to the action of carcinogenic agents leads to the conclusion that the condition represents an inherited deficiency in balance among the cells composing the organ.

In formulating an hypothesis it may be assumed with considerable supporting evidence that the normal cell in its growth and differentiation is controlled by two intrinsic balancing factors, one acting as a stimulator to growth and the other offsetting this force and acting as an inhibitor. The general idea is supported by the work of Spemann as well as by the demonstration that a factor may be derived from normal tissues which definitely inhibits the growth of cancer cells. A break in balance in such a system might occur in two obvious ways—either by the loss of the retarding factor, leaving the cell with only the stimulator, or the stimulating factor may be increased to a point where it overbalances the inhibitor. The latter condition may represent the malignant mechanism in fowl tumors, for there it

is possible to demonstrate both the stimulating factor (the transmitting agent) and the submerged inhibitor. The latter may be separated and when concentrated will neutralize the agent. As neither the stimulating nor the retarding factor can be demonstrated in mammalian tumors, the first of the two suggested changes would apply. Under this condition the inhibitor would be absent and the stimulator present only in the amount possessed by normal cells.

Under the terms of this hypothesis the degree of malignant potentiality of a cell group would depend on the inherited stability or lack of stability of the internal control system of the cells.

While there is some support for the suggested scheme, both from the study of the normal and the malignant cells, it still lacks sufficient proof, and until this proof is available it is presented only as a working hypothesis. As such it has been productive of several interesting points, and substantial support of its soundness may not be so far in the future.

THE USE OF MERCURY AS A DIURETIC *

By MARSHALL N. FULTON, M.D.

(*Abstract*)

Although the therapeutic use of mercury goes far back in time, the first appreciation of mercury as a diuretic has been attributed to Paracelsus. Its first intentional use for this purpose, however, has been ascribed to Lazar Rivière [1] (1589–1655), one time Professor of Physic at the University of Montpelier. Rivière refers frequently in discussing the treatment of dropsy to the use of "calomelanos of Turquetus." This seventeenth century name for calomel allies the drug with Sir Theodore Turquetus de Mayerne (1573–1655), who is thought to have given it its name. Mayerne, whom Sir Norman Moore has referred to as the first physician in England who devoted himself to minute clinical observation, speaks of calomel as a preparation of choice in the treatment of dropsy and follows the recommendation of its use by saying "Nothing eases the hydropic patient more . . . than abundant urine." [2]

Among the earliest clear cut references to the use of mercury as a diuretic is a brief article by William McKee of Raleigh, North Carolina, entitled "Calomel in Large Doses as a Diuretic in Dropsies." [3] In this McKee admits the earlier use of calomel as an adjuvant in the treatment of edema, but states that "in nc single instance" is he aware of its mention by earlier writers as a diuretic "when given alone either in small or large doses." McKee advocated using calomel in doses of forty to one hundred grains, repeated two or three nights successively.

While it is clear from these brief references that calomel was used as a diuretic many years ago, the credit for its employment for this purpose is commonly given to Jendrassik, whose well known paper published in 1885 re-introduced calomel as a popular diuretic.[4] Jendrassik when giving calomel combined with jalap in doses of ten to fifteen grains a day observed twenty-four-

* Read May 6, 1936.

hour urine outputs of five to ten liters in patients with cardiac edema. The modern use of the complex, organic, mercurial salts dates from the observations of Saxl and Heilig published in 1920.[5] These authors found that novasurol produced an extraordinary increase in the flow of urine in edematous patients. Since that time, other organic mercurial preparations—salyrgan and mercupurin—have come into common use.

The mode of action of mercurial diuretics is not clearly understood. There are, in brief, two views. One is that mercury acts directly on the kidney causing a decrease in the amount of reabsorbed glomerular filtrate. The other is that mercury in some way affects the tissues of the body bringing about a release of stored water to which the kidneys respond secondarily with a diuresis. To secure evidence on this point some studies were carried out in the Medical Laboratory of the Harvard Medical School by Drs. Bryan, Evans, Stead and myself.[6] Dogs, made edematous by plasmapheresis and salt administration, were given salyrgan intravenously. There followed during the next four hours an extraordinary diuresis. Frequent measurements were made during this time of the plasma specific gravity, total nitrogen, and colloid osmotic pressure. There was no evidence from these studies of any dilution of the blood preceding the diuresis. On the contrary, the findings pointed to a definite blood concentration as the diuresis progressed which indicated that the kidneys were removing fluid from the blood stream more rapidly than it was being added by the edematous tissues. This was taken as indirect evidence that the action of salyrgan was directly upon the kidney. The balance of experimental evidence from various studies is in favor of this point of view.

Further observations were made with Drs. Ethridge and Myers concerning the modifying effect of various inorganic salts on the diuretic action of salyrgan in dogs.[7] These studies showed that with all of five acidifying salts used in conjunction with salyrgan there was a marked increase in the urine output compared to that following salyrgan alone. With this there occurred a measurable drop in the carbon dioxide combining power of the plasma. Alkalinizing salts, on the contrary, had a definite inhibiting effect on the action of salyrgan when administered in an amount which produced a measurable alkalosis. Neutral salts had no effect. The combined effect of the acidifying salts with

salyrgan was found to be a synergistic rather than a summative one.

The organic mercurial salts have become in many quarters the diuretic of choice. Their greatest usefulness is in patients with cardiac edema. In these patients they can be employed repeatedly over a period of years with little if any toxic result and often with continued good effect. Salyrgan and the more recently introduced mercupurin, which combines theophylline with a complex mercurial salt, have been found about equally efficacious in these patients.[8] More recently, the mercurial salt of mercupurin without theophylline has become available in rectal suppository form under the name of mercurin. These suppositories have been found to produce very satisfactory diuresis in cardiac patients, in many instances comparable to those obtained by intravenous administration.[9] They have the added advantage of not requiring medical attendance for administration and appear to have a greater diuretic potency than the commonly used diuretics administered by mouth.

While mercury is contra-indicated in patients with acute nephritis or in those with chronic nephritis with marked renal insufficiency and nitrogen retention, it is often efficacious in relieving the edema of patients with the so-called nephrosis syndrome.

In patients with cirrhosis of the liver and ascites, mercurial diuretics have given disappointing results.[10]

(Specific illustrations of the use of various mercurial diuretics in these three types of patients were given.)

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OBSERVATIONS ON THE MECHANISM AND CLINICAL INTERPRETATION OF HEART SOUNDS *

By CHARLES C. WOLFERTH, M.D.,
and (by invitation)
ALEXANDER MARGOLIES, M.D.

(*Abstract*)

Studies of heart sounds have been made in which the sounds have been registered together with various other events in the cardiac cycle, to compare time relations of the sounds to other cardiac phenomena. Electrocardiograms, apex cardiograms, carotid and jugular sphygmograms and roentgenkymograms of the left ventricular and left auricular border, the aorta and pulmonary arteries have been used. The studies have yielded data bearing on the mechanism and interpretation of heart sounds, some of which are herewith summarized.

The First Heart Sound. It has been pointed out by Wiggers that registration of the first sound reveals preliminary, main and final vibrations. Only the main vibrations, however, are clearly audible. The main vibrations are composed of two components. The first sound is short, prolonged or split, depending on the synchronization of these two components. Thus in certain cases with respiratory incidence of splitting, short, prolonged and split first sounds may occur in a single respiratory cycle. Splitting of the first sound is associated with asynchronism in ejection from the right and left ventricle, suggesting that one component of the split sound orginates in each ventricle. This hypothesis is confirmed by the fact that the two components are capable of independent variations in intensity due to the time relationship of each to the preceding auricular contraction. The variation of each component is comparable to the now well known variation in intensity of single first sounds. The independent variations in intensity of the two components could not occur if both originated in the same ventricle.

* Read May 6, 1936.

Studies of the factors influencing the loudness of the first heart sound in patients yield the following results: Youth, small heart size, thin chest wall, tachycardia, thyrotoxicosis, mitral stenosis and hypertension tend to be associated with a loud first sound. Old age, large heart, thick chest wall, bradycardia, apical systolic murmurs and myocardial disease, especially bundle branch block and coronary occlusion, tend to be associated with a faint first sound. By far the most important factor, however, is the auriculoventricular time relation. When the P-R interval of the electrocardiogram is in the lower range of normal values (0.12 to 0.14 second) the first sound tends to be loud; when it is in the upper range (0.17 to 0.20 second) the first sound tends to be faint.

The Second Heart Sound. The second sound, like the first, consists of two components, one of which is produced by aortic valve closure and the other by pulmonic valve closure. Splitting of the sound is due to asynchronism in closure of the two valves. In all cases with split sounds, the aortic component can be identified by its time relation to the incisura of the carotid artery. In cases with widely split sounds the pulmonic component can be identified by its time relations to the V wave of the jugular tracing. These procedures may be useful when it is important to identify each component or to differentiate one or the other from additional or accessory sounds.

The Opening Snap of Mitral Stenosis. This is a short, usually sharp sound, falling as a rule in the range of 0.06 to 0.13 second after aortic closure. It is heard best in the fourth or third left interspace. It is practically pathognomonic of mitral stenosis, although conceivably a similar sound might occur in the presence of tricuspid stenosis. Studies of its time relations indicate that it occurs at the instant of opening of the crippled mitral valve. It is, therefore, probably due to vibrations set up by the sudden checking of the opening movement. In cases with the opening snap which later came to necropsy, all were found to have stenosed mitral valves capable of considerable movement. No case with a rigid mitral valve has had an opening snap prior to death.

Gallop Rhythm. All available evidence indicates that the extra sound is due to the impact of a wave of ventricular filling which is presumably transmitted through the ventricular wall to the chest wall. It may be either left or right sided. Ordinarily there are two waves of ventricular filling, one in early diastole and

one following auricular contraction. Corresponding to these waves, an extra sound may occur in early diastole (protodiastolic gallop, gallop of early diastolic inflow) or following auricular contraction (presystolic gallop, auricular gallop). If tachycardia or prolonged A-V time is present, there may be but one large wave of ventricular filling. There is only one wave because auricular contraction is superimposed on early diastolic filling. It is large because auricular contraction augments early diastolic filling. Under these circumstances (1) a third sound previously absent may make its appearance, or (2) if previously present in the form of protodiastolic or presystolic gallop (or both), it becomes much louder. This phenomenon we have called summation gallop. Since large waves of ventricular filling tend to cause gallop rhythm, it is common in hyperthyroidism and anemia. Equally important, however, in the production of gallop rhythm is the state of the heart muscle. Thus it may occur in acute or subacute carditis, such as rheumatic carditis, following myocardial infarction or in dilated failing hearts. Probably in these damaged hearts the impact of the wave of ventricular filling is more easily transmitted through the ventricular wall than in normal hearts.

Any hypothesis as to the nature of gallop rhythm must take into account the so-called physiological third sound, which has identical time relations and auscultatory characteristics. This sound occurs frequently in healthy children and young adults. There is no sharp dividing line from gallop rhythm and, at present, no good reason for thinking that the mechanism of production is essentially different. The pliable heart of youth and the diseased atonic heart may have in common the property of readily transmitting the impact of the wave of filling through the ventricular wall.

Systolic Gallop and "Mid Systolic Clicks." In the so-called systolic gallop, the third sound falls in the interval between the first and second sounds. It is dull and low pitched and is heard best over the base. In the comparatively few cases reported it has been noted most often in the presence of severe prostrating illnesses such as typhoid fever and miliary tuberculosis. It probably originates in the great vessels rather than in the heart itself. Its significance is doubtful, and because of its rarity its clinical importance is not great.

The mid systolic click is relatively common. It is a short,

sharp, clicking sound, usually occurring about midway between the first and second sounds. It is most often discovered in patients with presumably healthy hearts. Gallavardin found pleuropericardial adhesions in three cases and believes the sound is due to pulling taut of such bands of adhesions as the heart contracts. This sound should not be interpreted as evidence of disease.

Diastolic Murmurs. Most of the signs by which diastolic murmurs arising from incompetence of the semilunar valves are differentiated from those due to obstruction of the auriculo-ventricular valves are well known. Occasionally, however, difficulty is experienced in making the differentiation. Under these circumstances the time of onset of the murmur with relation to the second sound may be helpful. Aortic and pulmonic diastolic murmurs are continuous with the second sound or, if the sound is split, with one or the other component. Mitral or tricuspid diastolic murmurs do not begin with the second sound but after a so-called auscultatory gap, which is readily detected unless the rate is extremely rapid.

In acute or subacute rheumatic carditis a short diastolic murmur beginning after an auscultatory gap may be present over the body of the heart. This murmur is apt to disappear after recovery, although sometimes it persists for months. Definite signs of mitral stenosis may or may not develop later on. The important practical point is that this murmur is not necessarily a precursor of mitral stenosis, although it is probably due to valvulitis.

Splitting of the second sound in certain instances causes an auditory illusion of a short diastolic basal murmur. This sound should not be mistakenly interpreted as due to regurgitation through one of the semilunar valves.

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January 16

SYMPOSIUM ON THE RELATIONSHIP OF THE EYE TO THE PARANASAL SINUSES

Dr. Oscar V. Batson: "Anatomic Considerations."

Dr. Edmund Spaeth: "The Ophthalmological Viewpoint."

Dr. Edward H. Campbell: "The Rhinological Viewpoint."

February 20

Dr. Alfred Cowan: "Description of a One Meter Perimeter.'

Dr. H. Maxwell Langdon: "Treatment of Detachment of the Retina by Sclerotomy and the Application of the Thermaphore."

Discussion by: Dr. F. H. Adler and Dr. Langdon.

Dr. Burton Chance: "William Porterfield, an almost Forgotten Optic-Physiologist."

Dr. William A. Jeffers (by invitation), *Dr. J. Q. Griffith, Dr. W. E. Fry and Dr. A. G. Fewell:* "Experimental Studies in Choked Discs."

Discussion by: Dr. deSchweinitz, Dr. Fry, Dr. Fewell and Dr. Adler.

Dr. James S. Shipman (by invitation): "Extraction of Nonmagmetic Intraocular Foreign Bodies." Report of three cases.

March 19

Dr. Warren S. Reese: "Exhibition of Clinical Cases."

Discussion by: Dr. Zentmayer.

Dr. C. G. Shannon: "A Case of Sympathetic Ophthalmia with Substantial Recovery of Vision."

Discussion by: Dr. Spaeth, Dr. Fry, Dr. deSchweinitz, Dr. Langdon and Dr. Griscom.

Dr. Edmund Spaeth and (by invitation) *Dr. Joseph I. Gouter-*

man: "Angioid Streaks of the Retina with Pseudoxanthoma Elasticum and Disciform Macular Degeneration." Exhibition of Case.

Discussion opened by: Dr. Sigmund Greenbaum, Dr. Spaeth and Dr. Zentmayer.

April 16

Dr. William Zentmayer: "Marginal Degeneration of the Cornea with Prolapse of the Iris."

Discussion by: Dr. Cowan.

Dr. H. Maxwell Langdon and (by invitation) *Dr. Andrew Knox:* "The Treatment of Detachment of the Retina by Sclerotomy and the Application of the Thermophore." Exhibition of Case.

Dr. Francis H. Adler and (by invitation) *Dr. George P. Meyer:* "Tuberculin Testing in Ophthalmological Cases."

Dr. Francis H. Adler: "Interpretation of Cases of Uveal Tuberculosis and Experimental Tuberculous Allergy."

Dr. Francis H. Adler and (by invitation) *Dr. Edward R. Long:* "Histopathology of Experimental Tuberculous Allergy of the Choroid."

Discussion by: Dr. Langdon.

Dr. William J. Harrison: "Zonular Opacity of the Cornea."

PROCEEDINGS OF THE SECTION ON OTOLARYNGOLOGY

January 16

(Meeting with the Section on Ophthalmology)

Relationship of the Eye to the Paranasal Sinuses: Anatomic Considerations. By Dr. Oscar V. Batson.

A long series of studies, dating particularly from the well known investigation of Onodi, has shown the close anatomical relationships between the paranasal sinuses and the orbits. The mere adjacency of structures, however, is not sufficient to explain their reciprocal involvement in acute conditions.

A thin lamina of bone and a relatively dense peri-orbita separate the sinus cavities from the orbital structures. A series of injection experiments, performed on cadavera, is highly suggestive of the possible rôle that the venous circulation may play. The angular vein was ligated at the lower border of the orbit, and the anterior facial vein was exposed at the level of the upper lip. Roentgen opaque pigment was injected, and its course was studied on roentgenograms and cleared specimen. Under these conditions, the superior ophthalmic vein and many of its tributaries were filled through the connections around the lateral wall of the orbit and through small undescribed veins, which in a general way parallel the angular vein. Further connections, by the way of superficial nasal veins, carried the injected material to the angular vein of the opposite side. The cavernous sinus was readily filled. Probably most significant, was the demonstration of the plexus of veins about the nasolacrimal duct and the communication of these plexuses with the cavernous plexuses of the turbinates, as well as with the veins in the wall of the maxillary sinus. Therefore, on an anatomical basis, the many direct connections of the veins of the nose and paranasal sinuses with the veins of the orbit and cavernous sinuses of the cranium seem to present the probable pathway for the involvement of the orbit in infectious conditions of the nose.

Optic and Retrobulbar Neuritis in Relation to Sinus Disease. By Dr. Edward H. Campbell.

Most of the earlier investigators were of the opinion that the great majority of cases of optic and retrobulbar neuritis, were secondary to infections of the sinuses. During the last few years more writers have emphasized the importance of other conditions as etiologic factors; such as: 1. multiple sclerosis; 2. toxic conditions as from diseases, drugs and tobacco; 3. tumors or cysts of the frontal lobe; 4. acute infectious diseases; 5. foci of infection; 6. syphilis; 7. metabolic disturbances; 8. lactation; 9. tuberculosis; 10. Leber's disease.

Operation on the posterior sinuses in the presence of optic and retrobulbar neuritis greatly benefits the condition, in spite of the fact that usually no pathology is found in these sinuses. White advanced the theory of negative pressure within the posterior sinuses and believed that the benefits following operation on the posterior sinuses resulted from a relief of the negative pressure and not from the removal of any focus of infection. Stark has advanced an anaphylaxis theory to account for involvement of the nerve from a focus of infection.

In Lillie's report of 225 cases of retrobulbar and optic neuritis seen at the Mayo Clinic, only one case actually due to sinusitis was observed. By far the most common cause was multiple sclerosis.

Benedict, in 1933, advanced a theory for the improvement of these cases after operation on the sinuses as due to an improvement in the circulation to the nerve. In addition, the usual rise of temperature after operation had an effect similar to injection of foreign proteins. The same startling improvement of the eye symptoms has been observed from removal of the tonsils and extraction of the teeth, though relapses more commonly occur. In the handling of these cases a causative factor may be quickly discovered, and appropriate treatment instituted. The great majority of patients, however, require extremely exacting study and the close cooperation of the ophthalmologist, otolaryngologist, neurolgist, dentist and internist.

Discussion: *Dr. Walter Ivan Lillie:* An interesting series of sinus cases with definite pathology in the sinuses showed no optic or retrobulbar neuritis, while in a series of cases of retrobulbar and optic neuritis sinus disease was found. It is quite likely that the two conditions coexist often without being related.

Dr. Maxwell Langdon: There is no doubt that the relation to sinus disease does exist sometimes, as was shown by two cases of mine which improved definitely with treatment of the sinuses. Many of these cases, on the other hand, develop multiple sclerosis later. In one case there was no return of the optic neuritis and no development of multiple sclerosis in twenty years. In another case with frank optic neuritis, with congestion of the disc and with vision cut down, the cause was definitely sinus involvement. After removal of tonsils another case cleared up in ten days. So, I do not believe we should take too firm a stand against the relationship of infection in the sinuses and elsewhere to this condition.

Dr. Warren Davis: In regard to pneumatization of the posterior sinuses in children, the sphenoids are definitely present though not in the sphenoid bone. Their development is first postero-lateral and later medial, so that pressure and infection to the orbital contents is possible quite early. The posterior ethmoids also exist as a lateral mass of cells. Orbital abscess and celluitis is most often due to sinus extension.

February 19

Considerations in the Use of Barbiturates in Otolaryngology.

By Dr. William M. Fitzhugh, Jr.

Barbital or veronal is a product derived from urea by the interaction with the ester of diethyl malonic acid. All other barbiturates are derived from this compound.

The degree of drug action is represented by sedation, hypnosis, anaesthesia and death, depending on the dosage and type of barbiturate given. When light narcosis is induced, the patient reacts with a feeling of warmth and friendship towards his environment. He has no trace of fear, but rather one of relief. As narcosis deepens, it is followed by unconsciousness.

The action of the drug on the central nervous system appears to be first on the subcortical center, and then a stimulation followed by a depression of the basal ganglia. The shorter acting barbiturates (evipal, sodium pentobarbital, sodium amytal) are destroyed in the body, probably by the liver, but 50 to 75 per cent of sodium barbital and sodium phenobarbital are excreted unchanged in the urine. The drugs partially eliminated unchanged in the urine appear to have a longer duration of action.

The most efficient antidote for barbital poisoning is picrotoxin, especially if there is a respiratory failure. The dose of this drug is 1/60 to 1/30 grain, which can be administered intravenously (in five cc. of saline), intramuscularly or subcutaneously. Caffeine sodium benzoate given intramuscularly is also of value.

Barbiturate by mouth preliminary to general inhalation anaesthesia has minimized the pre-operative anxiety of the patient and decreased the required amount of inhalation anaesthetic and post-operative nausea. It also acts as a protection against cocaine and procaine poisoning.

Discussion: *Dr. George M. Coates:* This is an important subject to be brought before us and at a suitable time. The latent time in the action of these drugs is important, for some individuals are more susceptible than others, and we should be careful in their use with the patient who is weak and emaciated.

Mr. Aaron Lichten: From a pharmacist's point of view not all of the barbiturates are recognized by the pharmacopeia. The official barbiturates are usually kept by the druggist, and the availability and economy of these should interest the physician. Phenobarbital for instance has a wholesale price of sixty or seventy cents an ounce, while luminal (the trade name product) is about six dollars an ounce. In writing for these drugs, physicians may save time in dispensing if they will indicate "capsule or tablet," thus giving the pharmacist the privilege of using which ever form he may have on hand. For intramuscular or intravenous use the manufacturer supplies them in powder form in sealed, sterile ampoules, because the standard solutions are not stable. In this State a prescription is required for the barbiturates because of their habit forming qualities.

Congenital Cysts of the Neck. By Dr. William F. Moore.

It is now generally believed that the thyroid gland primordium develops in the floor of the pharynx at the tuberculum impar early in the fourth week of embryonic life as a short canal-like diverticulum which fuses to form a cylinder of epithelium without a lumen. This structure becomes separated from the pharynx and grows downward into the neck anterior to the region of the hyoid bone, the development of which occurs later. In the deeper part the thyroid gland develops, while the remainder of the thyroglossal tract regresses. As the hyoid bone goes forward the thyroid tissue is compressed, dividing the tract into supra and infra hyoid segments. The hyoid bone may cause a pinching off of segments. Small segments of the normal lining membrane of the pharynx about the primordium of the thyroid gland are torn loose and carried for varying distances into the deeper parts. These segments have all the tissue elements of the mucosa and persist in the fetus in the form of small cysts which lie along the path of the thyroglossal tract.

These cysts must be differentiated from: 1. adentitis; 2. dermoid cysts, granulomata and tumors of the thyroid.

Temporary relief may be given by emptying the cyst by aspiration, but complete surgical resection of the cyst and tract is the only method that has given satisfaction.

In thyroglossal duct cysts the whole tract nearly always involves the hyoid bone, so it becomes necessary to sever the hyoid or remove a section of it.

Discussion: *Dr. Oscar V. Batson:* I had been in anatomical laboratories many years before I saw one of these cases in an adult. Later, however, I saw seven in fifteen consecutive cadavera. These cysts usually occur in a chain running up from the pyramidal lobe of the thyroid to one side of the thyroglossal muscle. There is a question whether trauma may be a factor in their causation; but this is not likely in the two and half months old case reported.

Dr. Chevalier L. Jackson: In a woman of fifty years I saw a definite malignant carcinoma in one of these cysts. There was fullness in the glosso-epiglottic folds, and on biting through the smooth surface the inside was cystic. Since application of deep x-ray therapy she seems to be improving.

Dr. Warren Davis: In one case, a boy of nineteen years seen last year, the opening of the duct was one inch anterior to the foramen caecum. He used the cyst as a means of defence by shooting out foul smelling secretion. After removal, the pathological laboratory reported the specimen to be identical with the usual thyroglossal cyst.

Carcinoma of the Larynx: Treatment and End Results. By Dr. Louis H. Clerf.

Successful treatment is dependent on complete removal or destruction of the cancer, irrespective of whether or not the measures are considered conservative or radical.

The plan of treatment should be determined by the location and extent of the growth, the degree of malignancy and the presence of metastasis. Laryngofissure should be employed only in early carcinoma of the vocal cords. If the growth has crossed the midline, involving the opposite cord, some laryngologists advise laryngectomy. Lesions on the ventricular band, fortunately rare, or involving an arytenoid are considered extrinsic and should be treated only by laryngectomy.

Grading, or determining the degree of malignancy, is very important in arriving at a decision concerning treatment. Surgical extirpation should be practiced even in intrinsic cancer if the de-

gree of malignancy is high. The cellular anaplastic type of growth is said to respond favorably to irradiation.

In determining the operative procedure I do not hesitate to remove both vocal cords, portions of the ventricular bands, the subglottic structures including the thyrocricoid membrane, even an arytenoid and portions of one or both thyroid cartilages. The final healing airway may be inadequate, necessitating the use of a tracheotomy tube. However, a small airway can be employed advantageously in the development of the voice.

It is unfair to compare the results of one operator with those of another. In the very early cases where the cancer is limited entirely to a cord and the degree of malignancy is low the rate of cure should be practically one hundred per cent. In the intrinsic cases the rate recurrence varies from 50 to 80 per cent.

April 16

Streptococcic Otitic Meningitis with Recovery. By Dr. Henry Dintenfass.

M. D., a white male child, aged 8 years, developed a right-sided acute otitis media on December 1, 1935. A paracentesis was performed the following day with a resultant serosanguineous discharge. In the hope of combating this condition without surgery a blood transfusion of 150 cc. was given. Immediately after the transfusion the urine appeared dark and bloody. Nine days from the onset of the initial ear symptoms a simple mastoidectomy was necessary. Pus was found in the neighborhood of the antrum. Following another transfusion the urine again became very bloody in appearance.

On December 24, he was discharged from the hospital. On December 26, the patient awoke with a severe headache and vomited.

The spinal fluid was quite cloudy, the cell count being 9,800 and all neutrophiles. Culture of the fluid, reported two days later, showed hemolytic streptococci.

The mastoid wound was opened. Bone was removed over the middle and posterior fossae, and later an incision a half inch long was made in the dura over the middle fossa. The foot of the bed was raised about twelve inches to induce a free flow of cerebrospinal fluid through the dural incision.

Ten cc. of polyvalent antistreptococcic serum were given intraspinally. This was repeated every twelve hours. The fifth day following the first serum injection the entire body was covered with large urticarial blotches, which persisted for forty-eight hours.

The patient was discharged on February 13, fully recovered.

Discussion: *Dr. John A. Kolmer:* Since only one spinal fluid gave a positive culture for hemolytic streptococcus, I thought it likely that this was a case of localized meningitis and advised a free incision of the dura for local drainage. This procedure has been successful in the treatment of dogs and appears to be without danger. About 95 per cent of otitic meningitis has been caused by hemolytic streptococcus during the past two years. Intramuscular and intrathecal injections of concentrated antistreptococcus serum may be of some value in treatment, along with frequent spinal drainages and the best possible surgical drainage of the primary focus. Intramuscular injections of serum may also have some value in the prophylaxis of meningitis.

Dr. Walter Roberts: In the second operation we attempted to remove enough bone to uncover the dura and reduce local tension, our plan being, if that gave no improvement, to incise the dura down to the cortex. There was evidently enough basilar meningitis to involve the sixth nerve on the opposite side. Whether the serum injections were responsible for recovery cannot be said.

Dr. Goldstein: Paralysis of the opposite sixth nerve may have been caused by associated edema. One must be careful in the selection of anti-serum, or else it may act as a culture medium for organisms.

Dr. Matthew S. Ersner: In 1931, the literature showed 46 cases of recovery, and since then with this case 13, or a total of 59 recoveries. I believe early operation, adequate drainage and repeated small transfusions are the most important procedures.

The Cortical Representation of the Labyrinth. By Dr. E. Spiegel.

Excitability of the various sensory cortical areas was increased by localized strychninization in cats and dogs, and after such preparation the animals were rotated on a Bárány chair. After strychninization of parts of the temporal lobe, stimulation of the labyrinth by rotation induced epileptiform convulsions, while strychninization of the parietal or frontal lobe did not have such an effect. Cortical action potentials (the electroencephalogram) were then studied after stimulation of the labyrinth. If the potentials were led off from the temporal lobe, rotation was followed by their increase; and this was true after vagotomy, sever-

ance of the spinal cord or extirpation of the parietal or of the frontal lobe. These experiments seemed to indicate that the labyrinth is represented in the cortex, particularly in parts of the temporal lobe.

An analysis of 192 brain tumors seems to corroborate with regard to the human brain also the assumption of a representation of the labyrinth in the cerebral cortex, particularly in the temporal lobe, since temporal lobe tumors showed the greatest frequency of vertigo. The conception that vertigo in brain tumors is only a general symptom of increased intracranial pressure seems to need revision. In some cases at least, it seems not unreasonable to assume that the vertigo appeared as a local symptom from the cerebral cortex due to a direct lesion (stimulation) of cortical areas.

Orbital Celluitis. By Dr. Horace J. Williams.

There are three stages in the development of orbital celluitis: first, edema of the lids, ordinarily non-inflammatory in character; second, edema of the lids with exophthalmos, with beginning of chemosis; third, edema of the lids with discoloration, exophthalmos, limitation of motion and evidence of abscess with pointing.

Orbital celluitis is most frequently secondary to disease of the paranasal sinuses. Sinus infection may enter the orbit by direct extension, either with necrosis of the bone or through a dehiscence in the bony wall, or by thrombophlebitis.

In the first stage the swelling is due to the effect of toxins absorbed from the adjacent focus of infection. In the second stage, bacterial invasion of the orbit may have occurred. The periorbita is rarely penetrated, and in stage three the pus will be found outside the periorbita, between it and the bony wall of this cavity.

In a typical case there is marked edema of the lids, elevation of temperature and in twenty-four to forty-eight hours exophthalmos, with limitation of motion. The conjunctiva may be edematous. For twenty-four hours there may be improvement. Improvement is halted and inflammatory infiltration of the lids begins and soon points, usually in the upper lid at the inner canthus, but possibly anywhere in either lid.

There is a great tendency to spontaneous subsidence. This is particularly true in children, where the ethmoid labyrinth is the point of origin.

Treatment depends on the stage of the disease. In the first stage, it is always conservative. When the symptoms of the second stage arise some surgical interference may be necessary. When the edema, exophthalmos and limitation of motion are marked, ethmoidectomy by the combined external and intranasal approach is the procedure of choice.

It is proper to stress the fact that an essential step in any operative procedure is to drain the sinus from which the disease spreads.

Discussion: *Dr. George M. Coates:* Fifty cases of orbital celluitis is a large number for one man to see in such a short time. It is interesting that in a British Medical Journal recently, considerable objection was raised to removal of tips of turbinates and to other intranasal surgery, although removal of some anterior ethmoid cells was thought advisable to relieve pressure on the naso-lacrimal duct. In relieving collections of pus in the orbit I used to be concerned about the possibility of diplopia afterward, but my ophthalmologic friends assure me this rarely occurs.

Dr. Ralph Butler: These cases are apt to be puzzling, though they often respond to conservative treatment. If external operation seems advisable it is wise to have an ophthalmological consultant.

Dr. Horace J. Williams: One of the cases reported gave considerable trouble, for removal of the anterior tip of the middle turbinate was not sufficient, so later I had to do the external operation to establish sufficient drainage.

Allergic Rhinitis: A Statistical Study. By Dr. Edward V. Clark and Dr. Rodgers.

Discussion: *Dr. Philip Stout:* It is interesting that only 10 per cent of the cases had strongly positive skin reactions. The success of the injection treatment is very hopeful. I noticed that only a small number of the cases were due to food sensitivity.

Dr. Goldberg: Dr. Johanns Rhoades, in 1639, reported a case of one of his patients who developed an epistaxis after smelling a rose. Thomas Willis, in 1682, noted "upper respiratory attacks in a select virgin of sixteen." A typical case of allergy was reported in the *Philosophic Transactions* published in London in 1776, in an article called "Asthmatic Fits from Effluvia of Ipicac Powder."

Dr. Benjamin H. Shuster: I confess to operating on cases presenting allergic symptoms, and surprisingly enough correction of septal deformities and removal of obstructing turbinates seemed to give relief. In one case I recall removing the middle turbinate and intended to remove the other, but the patient was relieved and never came back.

Dr. E. V. Clark: About twenty years ago all of these noses were operated on, but to-day the nose and throat surgeons have become too conservative. From the establishment of the first symptoms of this disease the mucous membrane in the whole upper respiratory tract and bronchi becomes similarly affected. Food allergy should be considered as usually arising from over-indulgence in certain foods, though some food reactions, such as that to mustard, may be specific without over-indulgence. The historical reference of Dr. Goldberg is interesting, though it seems impossible that the ancients believed that disease could develop from anything which was not harmful.

PROCEEDINGS OF THE SECTION ON GENERAL MEDICINE

January 27

Immunologic Aspect of Tobacco in Thrombo-angiitis and Coronary Artery Disease. By Dr. Abraham Trasoff, Dr. George Blumstein and Dr. Myer Marks.

Tobacco has been looked upon as an aggravating factor in thrombo-angiitis obliterans and coronary artery disease. This was ascribed to the toxic effect of its nicotine content on the sympathetic ganglia.

An attempt has been made to approach these two conditions from the immunologic aspect, and evidence has been produced by some observers that the above two diseases could be grouped as allergic conditions. One of the observers has even been able to obtain passive transfers in many such cases.

Our studies have been directed toward investigating the immunologic aspect only. Thirty-one proven cases of thrombo-angiitis obliterans and twenty-three of coronary artery disease were studied. As controls, 90 cases of normal smokers, normal non-smokers, allergic smokers and allergic non-smokers were tested with various extracts of tobacco leaf and other extracts of the most frequently used cigarettes and cigars. Common atopens, such as rag-weed, timothy, house-dust and feathers, were also employed as controls.

Of the 31 proven cases of thrombo-angiitis obliterans, 16 per cent gave slight reactions. Of the 21 coronary cases, 13 per cent gave slight reactions to tobacco and 28 per cent reacted to the other substances inhaled. Of 52 normal non-smokers, 21 per cent gave slight reactions to tobacco, and 25 per cent reacted to house-dust and feathers. Out of 40 normal smokers, 17 per cent reacted slightly to tobacco. Out of 17 allergic smokers, 47 per cent reacted to tobacco (from mild to moderate), and all reacted to the other allergens. Of the 24 allergic non-smokers, 25 per cent gave slight reactions to tobacco, and all gave moderate reactions to the other inhalants. Tobacco played no etiologic rôle in their allergic

conditions. There was no difference in the reactions to the various brands of tobacco or kinds of cigarettes. No passive transfers were obtained in either disease group.

It is interesting that one passive transfer was obtained in a non-allergic, who had a history neither of coronary disease nor of thrombo-angiitis obliterans. It is also of interest to note that there was no difference in the skin reactions in normal smokers and normal non-smokers. The comparatively greater number of reactions in the allergics is explained on the basis of greater reactivity in allergic skins, which is frequently of a non-specific nature.

Amebic Abscess of the Liver: Report of a Case without Previous Manifestations of Amebiasis: Operation and Recovery. By Dr. Harold L. Goldburgh.

Craig believes that between 5 and 10 per cent of the American population harbor *Endamoeba histolytica*. Judging from the records of the 232,000 admissions and the 24,000 autopsies of the Philadelphia General Hospital and the 120,000 admissions and 3,000 autopsies of the Jefferson Hospital during the last 10 years, the diagnosis has been comparatively rare. Since the Chicago epidemic of 1933 a few cases are being discovered. Amebic abscess of the liver has been conspicuously uncommon.

The case reported is that of an adult male, age 58, who gave no history of previous amebic dysentery and whose first symptoms were right upper abdominal pains, with fever, leucocytosis with no eosinophilia and liver enlargement. The condition resembled an acute gall bladder syndrome with probable liver complications, for which the patient was operated upon. A solitary right lobe liver abscess was discovered at operation, and 10 ounces of a brownish pus were aspirated. It was found to contain motile *Endamoeba histolytica*. Open drainage was instituted because of an associated mixed infection. The patient seemed relieved within a period of 48 hours and was discharged from the hospital after 8 weeks as clinically relieved.

Following his operation further studies of the gastro-intestinal tract, including duodenal intubation and 10 stool examinations, did not reveal the presence of *Endamoeba histolytica* either in the vegative or cystic form. However, the x-ray of the colon

by contrast studies did show chronic inflammatory lesions at the cecum and ascending colon.

It is suggested that a course of emetine therapy be instituted before or following operation in all suspected or proved cases of amebic abscess of the liver, providing that there is absence of myocarditis.

This case illustrates the fact that the first symptom of amebiasis may be an abscess of the liver, which is the most frequent complication of amebiasis. One must keep the diagnosis in mind as a possibility in all hepatic enlargements, since amebiasis is no longer a tropical disease.

The Evaluation of the Fasting Blood Sugar. By Dr. Edward S. Dillon and Dr. Carlton R. Souders.

Although the measurement of fasting blood sugar is usually a satisfactory procedure in following the progress of treated cases of diabetes, there are recognizable diabetics whose fasting sugars give no idea of the height of the sugar during the rest of the day. It is not generally realized that the blood sugar can change very markedly from hour to hour. By taking blood sugars at frequent intervals throughout the day and night in a group of patients of all types, curves were plotted which show definite patterns according to the distribution of insulin. These may be divided into groups. One group consists of patients who need little or no insulin. In these the fasting blood sugar is the lowest for the day. Another group has the fasting sugar the highest for the day. In these there is a marked rise in blood sugar level at night without any carbohydrate intake. A third group needs insulin before each meal to keep the blood sugar within reasonable levels.

Several very bizarre cases were found. These patients needed unusual distribution of insulin dosage to remain under control.

It is advisable to check every patient by examining the urine for sugar in four fractions daily and occasionally to take blood at 11:00 a.m., 7:00 p.m. or 9:00 p.m. These precautions tend to prevent cases being improperly labeled as refractory to insulin or as impossible to control.

THE MECHANISM OF HEADACHE. By Dr. Temple Fay.

The author presents studies concerning this problem, covering a period of eleven years. The objective has been to determine first the existence and location of pain fibers within the cranial cavity, capable of giving rise to the experience of true headache, and secondly to trace these fibers to their points of entry into the nervous system and their final common pathway to the thalamus.

A definition as to what comprises true headache, with exclusion of extra-cranial manifestations frequently loosely regarded as such, has been arbitrarily adopted.

Neurological studies and operative results, obtained by section of the various recognized pain pathways of the cranial and cervical nerves, established the small part that these structures play in the mechanism of true headache.

Observations were made upon stimulation of exposed vascular structures in the neck and brain, in patients under local anesthesia, followed by destruction of vascular fiber pathways.

The course and points of entry of these vascular pain fibers have been traced into the spinal cord, as determined by operative section of pre- and post-ganglionic sympathetic roots, of spinal roots and by chordotomy and finally as checked by a method of controlled ascending spinal anesthesia developed by the author.

The symptoms of headache produced by volume changes in the vascular compartments of the craniovertebral cavity have been correlated with encephalographic findings and with the symptoms produced and controlled at will.

Correlation of these findings is made with the experimental work on histamin, headache, water balance factors and types of hyperemia induced or arising spontaneously in pathologic states, in the light of the Monro-Kellie doctrine. Clinical application is described of the demonstrated mechanism of headache with confirmation of response in types of cases involved.

The postulates that in the mechanism of arterial stretch lies the cause of headache and that two arterial types of stretch are encountered—(*a*) ventriculo-arachnoid distension and (*b*) hyperemic engorgement—are presented, discussed and illustrated.

February 24

The Clinical Importance of Circulation Time Measurements: Report of a Simple Method. By Dr. Samuel J. Goldberg.

The arm to tongue circulation time, a relative index of the rate of blood flow through the lungs, is a useful test of the functional efficiency of the circulation. The velocity with which the blood flows through the lungs is a composite result of the oxygen demands of the body and the capacity of the heart and blood vessels to propel the blood to meet such demands.

Methods of determining circulation time, which have been previously reported in the literature, are reviewed, and their practical advantages and disadvantages are discussed. Factors which influence the circulation time are considered, and the clinical significance of such alterations in velocity is emphasized.

A simple method is described, which lends itself to general use; and the results in 156 normal and pathologic cases are reported. The calcium gluconate method gives normal readings from 10 to 16 seconds, with a mean arm to tongue circulation time of 12.5 seconds. Hyperthyroidism increases the velocity of the blood flow, and cardiac failure markedly slows it. In myxedema and hypothyroidism there is a slowing of the circulation in proportion to the fall in metabolism. The test is helpful in the differentiation of edema of cardiac or renal origin and may be of assistance in distinguishing between cardiac and bronchial asthma. The calcium gluconate test is approximately accurate and is easy to perform. No untoward effects have been observed, nor has there been any thrombosis or tissue damage in a single instance.

Factors Leading to Selective Collapse in Artificial Pneumothorax. By Dr. Richard T. Ellison.

It is pointed out first that the production of selective collapse is beyond the control of the operator. The development of selective collapse is dependent on a difference in various parts of the lung in the physical forces and physiological factors that lead to the collapse of pulmonary tissue.

In this discussion it is assumed throughout that the pleural space is entirely free from adhesions.

It has been observed that selective collapse may develop in

two distinct ways. First, selective collapse may develop at once on the introduction of air—*Immediate Selective Collapse.* Second, selective collapse may develop only after an interval of time —*Delayed Selective Collapse.*

Immediate selective collapse is brought about by the loss of volume of the affected lobe due to fibrosis with or without atelectasis occurring before the induction of artificial pneumothorax. Compensation for this loss of volume causes increased stress between the shrunken lobe and the perilobar structures so that when air is introduced into the pleural cavity it immediately flows toward that area. The elasticity of the lung plays no part in the production of this type of selective collapse. This is by far the most common type of selective collapse because in most cases some degree of fibrosis with or without atelectasis has occurred before artificial pneumothorax is attempted.

Delayed selective collapse is the type described by most authors and they have invoked the elasticity of the lung in various ways to explain its development. Generally they have predicated an increased elasticity; but the elasticity of the lung cannot be increased and especially not by a process of disease. Simple loss of elasticity leads to emphysema. If, however, there is an infiltrative process along the lines of elastic recoil this will increase the immobility of the lung, making more difficult its collapse and also more difficult its re-expansion.

Such an infiltrative process is best seen in early bronchopneumonic dissemination of a tuberculous lesion into one lobe. When we induce artificial pneumothorax in such a patient we find that at first the healthy lobe is more compressed than the diseased one and it is only after an interval of time that a selective collapse of the diseased tissue comes about.

Rocky Mountain Spotted Fever: Report of Two Cases. By Dr. Herman Gold and Dr. William Goodman.

Ten cases of Rocky Mountain spotted fever have been reported in Pennsylvania since 1930. Eight of them contracted it in this state, three in Delaware County.

Case 1. White male, bitten by a tick near Gradyville, Pennsylvania. Nine days later, June 1, 1933, he developed headache, low backache, cough and fever. Six days after onset of symptoms a macular pink rash that faded out on pressure appeared in crops

over his body. A week later the rash on the extremities became petechial, lasting for two days. The patient was very restless, occasionally delirious, had severe backache and marked conjunctivitis. At the height of the eruption: R.B.C., 3,870,000; W.B.C., 11,400; polymorphonuclears, 73 per cent; lymphocytes, 27 per cent. Blood culture, Wassermann and Widal tests were negative. Two days after eruption disappeared, patient developed left parotitis, followed by right side involvement. This subsided in four days. Weil-Felix reaction was positive in dilutions 1:15 to 1:480 on June 24.

Case 2. White male, admitted on July 8, 1935, suffering from fever, delirium, weakness, and presenting signs in the right lower chest, suggestive of broncho-pneumonia. The latter became more extensive and persisted throughout the illness; confirmed by x-ray. Symptoms had begun the day before. He lived on a farm in Wallingford, Pennsylvania. On July 13, a pink macular rash was found on his chest, abdomen and extremities, which did not disappear on pressure. Conjunctivae were injected. A tick was then accidentally discovered deeply buried in the left arm. Next day, hemorrhagic macules appeared on the hands and feet and spread to the body, lasting four days. Restlessness and delirium were marked. W.B.C., 7,280 and 9,920. Wassermann and Widal tests, blood culture, and spinal fluid were negative. On July 17 (eruptive stage) Weil-Felix reaction was positive in dilutions 1:20 to 1:640. During convalescence (July 23) patient's blood was found to contain protective bodies against serum virus of the Bitter Root strain of Rocky Mountain spotted fever.

Effect of Estrogenic Substances in Certain Cases of Diabetes Mellitus. By Dr. Joseph T. Beardwood, Jr., and Dr. Paul Patton.

1. Experimental evidence indicates the existence of a factor in the adrenal which plays an important rôle in ketogenesis and glycogenolysis and that this factor is apparently under control of the anterior lobe of the pituitary.

2. Administration of large doses of female follicular sex hormone apparently has an inhibitory effect on the action of the anterior pituitary in stimulating the adrenal factor to ketogenesis and glycogenolysis.

3. This type of therapy does not replace insulin and diet in management of diabetes mellitus.

4. Demonstration of successful results of clinical use of large doses of female sex hormone in three severe and complicated cases of diabetes mellitus.

(*a*) Prevention of recurrent coma at the menstrual period in a young female.

(*b*) Reduction of the insulin dose and basal metabolic rate in a menopausal female.

(*c*) Reduction of insulin dose in a post-menopausal female despite the presence of a low grade infection of the great toe.

March 23

Hyperparathyroidism Relieved by Removal of a Parathyroid Tumor. By Dr. John B. Flick and Dr. John H. Gibbon, Jr.

O. A., a colored man aged 66, entered the Pennsylvania Hospital in October, 1933, with a diagnosis of hyperparathyroidism and osteitis fibrosa cystica.

Six years before he had developed acute retention of urine from hypertrophy of the prostate, and a prostatectomy was performed. Four years before admission he had quit work because of pains in the ankles and knees and a painful lump in his right clavicle. Bone cysts were found in both clavicles by x-ray. In January, 1930, the clavicular lesions were explored and found to contain tumor tissue which was curetted out. The tissue removed was typical of giant cell tumor. The serum calcium after operation was found to be 12.5 and the serum phosphorus 2.8 mgm. per 100 cc. These abnormal values were suggestive of hyperparathyroidism; but nothing further was done until December, 1931, when the patient was seen in the follow-up clinic and the calcium and phosphorus determinations were repeated. Because the abnormal values persisted the skeleton was x-rayed, and cystic lesions were found in the ischium, ileum, ribs, right tibia and both hands. There were no lesions in the skull. In June, 1933, the pain in both knees had become worse, and search for a parathyroid tumor was advised; but the operation was postponed.

On admission, in October, 1933, he had constant pain in both knees, frequency of urination and nocturia, and became easily

fatigued. There was no palpable tumor in the neck. Kyphosis of the thoracic spine and bowing of the legs were quite marked. The latter had been present since he was 15 years old, but had increased perceptibly in the last two years. The patellar and Achilles tendon reflexes were diminished. The urine was clear, acid, with specific gravity 1.020. It contained a few pus cells, but no albumin, sugar, erythrocytes or casts. Slight curvature of the trachea to the left in the neck was evident by x-ray. Just before operation serum calcium was 15.8 and phosphorus 2.7 mgm. per 100 cc. At operation a yellowish brown tumor measuring $4 \times 2\frac{1}{2} \times 2$ cm. was found in the position of the right parathyroid body. It was removed. After operation the serum calcium fell rapidly to normal values where it has remained for two years since operation. There were never any signs of tetany. The serum phosphorus remained low for several months but has slowly risen to normal values in the past two years. He has been relieved of the pains in his knees but still has frequency and nocturia. Some of the cystic areas in the skeleton have become denser since operation.

Complete A–V Heart-Block with Adams-Stokes Syndrome: Report of a Case with Clinical and Pathologic Findings. By Dr. D. N. Kremer, Dr. S. Bellet and Dr. Louis Laplace.

This patient, a male aged 29, was in good health and able to work as a ship's electrician until about three months before death. At this time, he experienced his first attack of Adams-Stokes syndrome. Because of continuance of these seizures he was admitted to the hospital shortly thereafter. Examination from the cardiovascular standpoint was essentially negative, except for the presence of a slight cardiac enlargement, a systolic apical murmur and the presence of a complete A-V heart-block. Injection of atropine failed to influence the idioventricular rate. Various therapeutic procedures—the administration of barium chloride, thyroid extract, ephedrine—had but slight effect in controlling the seizures. Injection of novocain followed by 95 per cent alcohol into the exposed left vagus nerve resulted in temporary abatement of the Adams-Stokes seizures; however, they recurred about a week after operation. Death occurred during one of the attacks. Numerous electrocardiographic tracings taken

during the unconscious spells, which varied from eight seconds to five minutes, showed ventricular standstill with maintenance of the auricular contractions, the latter showing marked changes in amplitude and rate. Periods of complete cardiac standstill for three to five minutes were also recorded. An interesting observation was that striking the precordium sharply with the fist would bring on a return of ventricular activity.

Post-mortem examination revealed slight cardiac enlargement, due chiefly to cardiac dilatation. The muscle appeared flabby and somewhat pale. No macroscopic lesions were observed in the A-V node. Microscopic study of serial sections of the conduction system revealed a severe grade of vacuolar degeneration involving a considerable portion of the conduction tissue in the bundle of His and extending into the branch bundles. While no complete break in the bundle tissue was present, the remaining muscle showed marked degenerative changes.

Gastroscopy as an Aid in Diagnosis. By Dr. Chevalier L. Jackson and Dr. William A. Swalm.

The development of the flexible gastroscope, especially that of Schindler, has brought a new era in the endoscopic study of the stomach, because the technic of its introduction is easier than that of the straight and rigid tubes and because it permits a satisfactory visualization of the antrum and pylorus in a great majority of the cases. However, even the flexible instrument must be introduced with care and skill, and careful preliminary study of the patient, including roentgen examination and in some cases open tube esophago-gastroscopy, is indispensable if complications are to be avoided and satisfactory results obtained. For routine use the Schindler instrument possesses certain definite advantages, but its use is contraindicated where there is any disease of the esophagus or cardiac portion of the stomach, and such contraindications to the use of the flexible instrument constitute indications for examination with the open tube instrument. Diagnostic gastroscopy is of value: (1) as an aid in differentiating benign ulcer from carcinoma, with or without biopsy; (2) in determining the location and extent of a gastric neoplasm, with a view to appraisal as to operability; (3) in examining post-operative stomachs of patients in whom symptoms persist; and last but perhaps most important, (4) in diagnosing and differentiating the various forms

of chronic gastritis. Gastroscopy is not to be regarded as a method of study which will supplant any other, but it should be accepted as a part of the complete study of the patient with gastric complaints, because direct inspection of any mucous membrane is of value in determining its condition and diagnosing its affections.

PROTAMINE INSULINATE IN THE TREATMENT OF DIABETES. By Dr. Garfield G. Duncan.

Protamine insulinate, an insulin compound (the insulinate being precipitated by a protamine obtained from the sperm of a species of trout) administered subcutaneously as a suspension, was discovered by Hagedorn *et al* to have a less abrupt but more prolonged effect on the blood sugar than insulin hydrochloride.

Our clinical results with protamine insulinate, as illustrated in the lantern slides, confirm this observation and those of Krarup and Root *et al* in that: 1, It tends to prevent great flucuations in the blood sugar, hence is of special value in children and severe diabetics. 2. The tendency to hypoglycemic reactions is reduced. 3. Morning hyperglycemia is prevented or reduced by its prolonged action. 4. Less insulin and fewer doses are needed. 5. Spacing of the insulin doses is simplified. 6. The insulinate is often ineffective for the first few days; therefore, the change from insulin to insulinate treatment is accomplished gradually. 7. It is of special value in dealing with diabetic neuritis. 8. The qualitative makeup of the diet does not alter its effectiveness, and meals need not follow the injection with the same promptness as with regular insulin.

A patient, male aged 30, who was refractory to the insulinate is reported. In spite of increases in the evening insulin from 30 to 70 units for 20 days, glycosuria increased; and yet when regular insulin was resumed 30 units were adequate to correct the glycosuria and hyperglycemia.

The value of protamine insulinate to the diabetic is certain. Time and study will extend its uses, but its limitations must be recognized. Its application must be studied individually for each patient. Accurate diets are still essential.

April 27

Hypertension Produced by Excessive Fluid Intake: An Experimental Study. By Dr. John Q. Griffith, Jr., Dr. W. A. Jeffers and Dr. M. A. Lindauer.

129 rats were given fluid, either water or physiologic saline, in amounts of 15 to 30 per cent of the body weight. The fluid was given by hypodermoclysis or intraperitoneally. Of these animals, 40.5 per cent developed a vascular hypertension, 151 to 300 mm. of mercury, within 24 hours, which lasted for approximately 24 hours after its onset. The incidence of its occurrence with distilled water or physiologic saline was approximately the same. It could not be related to dilution of the blood, nor to water content of the brain, but did bear a rough relationship to spinal fluid pressure, the two varying directly. Some evidence was also presented that the spinal fluid pressure and the water content of the brain varied inversely.

Further Experience in Bacterio-Therapy of Septic Infections.* By Ward J. MacNeal, M.D., Professor of Pathology and Bacteriology, New York Post-Graduate Medical School and Hospital, Columbia University.

The cells of many bacterial species disintegrate and dissolve in old cultures, apparently in part by action of enzymes produced by the bacteria themselves. Transmissible bacteriolysis seems, however, to be caused by filterable viruses to which the name of bacteriophages has been given. These filterable agents may be propagated in the laboratory and, when properly prepared in a suitable bland medium, they may be employed to combat specific infections in the human body, being administered by mouth, by local application or by injection into the tissues or into the circulating blood.

Complete bacteriolysis is the striking obvious feature of the action of these agents in the test tube, but this complete effect is prevented by the environmental conditions existing in the body. In general, one may expect here only partial alteration of the bacterial cells such as to render them more susceptible to phagocytosis.

Bacteriophages have been found useful in the treatment of

* Aided by a grant from the Josiah Macy, Jr., Foundation.

infections with the colon bacillus in the urinary tract and in septicemia, in dysenteries, enterocolitis and intestinal fistulae. They have been found valuable in furunculosis, staphylococcus abscesses and staphylococcus septicemia; in early and late osteomyelitis and in suppurative arthritis. A successful technic of application in endocarditis has not yet been developed; and in streptococcus infections the streptococcus bacteriophages are, in general, rather feeble and less effective than the streptococcus serum.

May 25

Gout: Its Prevalence Among Chronic Arthritics. By Dr. Abraham Cohen.

The incidence of the diagnosis of gout at Philadelphia General Hospital from 1905 to 1929 and from 1929 to 1935 is discussed. Attention is called to the many cases that go undiagnosed for a long period, and the errors in diagnosis are pointed out. A new set of diagnostic criteria is suggested. Thirty-seven cases were treated over a period of five years with few recurrences, in contrast to the fact that many of these cases previously would have many attacks yearly. The concept that gout is monarticular, a disease of the wealthy, and one which requires an elevated blood uric acid should be condemned. It begins in the great toe in approximately 25 per cent of the cases.

The old method of treating gout is unsystematic and should not be employed. A new method is suggested whereby the disease is controlled. The diet, colchicine and periodic blood uric acid determinations are the important factors in this treatment. Five case histories are given to substantiate the above facts.

Hemophilia in the Negro. By Dr. Noble F. Crandall.

A careful review of the literature failed to reveal a single case of hemophilia in the negro. The case here reported, excepting family history, is typical of hemophilia. There is no family history that could, even by a stretch of the imagination, be interpreted as the genealogy of a hemophiliac. The patient was a very black negro, who presented a history of immoderate hemorrhages from several sources since early childhood. He further showed rapid recovery following hemorrhage and had also the

characteristic mischievous temperament, which Bulloch and Fildes noted to be so constant as to be almost a minor feature of the disease. He developed hemarthrosis of the left knee and joint changes typical of those found in hemophiliacs, though they are not pathognomonic. Only one of the thirteen coagulation times was within normal limits. This one was taken during a period of active hemorrhage. The coagulation time was still markedly prolonged five months after cessation of hemorrhage. The platelet count, the tourniquet test, the clot retraction, the Wassermann and Kahn tests were all negative.

It is therefore concluded that hemophilia in the negro is exceedingly rare and that the case here cited is the first instance to be recorded.

Observations on the Takata-Ara Test and Hepatic Diseases. By Dr. Tracy D. Cuttle and William A. Wolff, Ph.D.

One hundred thirty-six Takata-Ara tests, Jezler technique, were performed on 76 patients at the Pennsylvania Hospital. The results were tabulated with clinical observations, albumin-globulin ratios, bilirubinemia and other blood chemical studies, functional tests of the liver and necropsy findings. The condition of the liver was observed grossly and microscopically in 28 patients at necropsy and in 2 at operation with biopsy. A positive Takata-Ara test was obtained in 17 out of 18 patients diagnosed as Laennec's cirrhosis and in 16 out of 31 patients with other diseases involving the liver. The data showed no relation between the result of the Takata-Ara test and the presence or absence of jaundice. A positive test was usually associated with an inverted albumin-globulin ratio. This alone was not responsible for the reaction. In all probability other factors, one of which may have been cholesterol, entered into the reaction.

A positive test is not always indicative of hepatic damage, nor is it specific for any type of liver disease. The test has some prognostic value.

Terminal Ileitis. By Dr. I. S. Ravdin and Dr. J. E. Rhoads.

Recent reports on terminal ileitis suggest that it is a new entity. It now appears probable, however, that it is in reality an old lesion more properly called nonspecific granuloma of the in-

testine. Crohn, Ginzburg and Oppenheimer redirected attention to it by their very excellent description of the disease as it occurs in the lower ileum. Subsequent reports have shown clearly that the process is not limited to the ileum.

Etiology. The etiology of the disease is unknown. Tuberculosis, syphilis and malignancy have been excluded. Some authors suspect dysentery bacilli; some believe that organisms associated with ulcerative colitis play the causative rôle. We believe it is possible that the lesion may be the result of a virus infection.

Pathology. The most common site is the terminal 15 to 25 cm. of the ileum. Other parts of the intestinal tract may be involved, and in occasional instances multiple segments of intestine have been affected.

At the involved area all coats of the intestine are infiltrated with round calls. There is usually marked edema. Polymorphonuclear cells and multinucleated giant cells are frequently present in considerable numbers. Mucosal ulcers are common, particularly on the mesenteric border. In the later stages fibroblastic proliferation is very marked, and the lumen of the intestine is narrowed. Regional lymph nodes are enlarged.

Incidence. Approximately 150 cases have been reported since attention was focused on the disease by Crohn. In many instances no details are available. Incidence is higher among males than females, and persons in the second, third and fourth decades are most often affected.

Symptomatology. An acute form occurs with symptoms indistinguishable from acute appendicits. In rare instances the two conditions have coexisted. The more chronic forms may simulate ulcerative colitis. Many of the chronic cases gradually develop intestinal obstruction, due to stenosis of the intestinal lumen. The formation of fecal fistulae is frequent and may be the first symptom to bring the patient to a hospital.

Diagnosis. In the acute form of the disease laparotomy is usually imperative, due to the danger of neglecting an acute appendicitis.

In the chronic form, the history, palpation of a sausage shaped mass in the right lower quadrant, and exammination of the gastro-intestinal tract by x-ray generally lead to a presumptive diagnosis without operation. Delayed motility of the small intestines,

dilatation of the intestine proximal to the lesion and narrowing of the lumen at the site of involvement, producing the so-called string sign, may be demonstrated by x-ray.

Prognosis. Spontaneous cure has been reported but a majority of cases go on to obstruction or perforation. Perforation leads usually to abscess and fistula formation but rarely to generalized peritonitis.

Treatment. Roentgen therapy has been employed in too few cases for an evaluation. Reported results have not been very consistent. At present surgery offers the most reliable form of treatment. In the presence of acute obstruction ileostomy may be required first. Where possible, ileocolostomy with resection of the involved intestine is the procedure of choice. If this is not feasible ileocolostomy with division of the loop leading to the lesion may be done with the prospect of a good end-result in most cases. Ileocolostomy has rather frequently led to poor results.

The prognosis with treatment is favorable.

PROCEEDINGS OF THE SECTION ON MEDICAL HISTORY

January 10

The History of Goitre. By Dr. Victor Robinson (by invitation).

In an illustrated presentation the author recounted man's varying conceptions of thyroid diseases throughout the ages. In the pre-Christian era, cretinism was regarded as having a supernatural aspect, as indicated by stories of mythological characters who were obviously cretin dwarfs. Early types of medication were described, including the use of burned sponges. The paper was concluded with an excellent account of the discoveries leading to the modern concepts of thyroid disease and its treatment.

Thomas Tryon, Student of Physic and Writer on Dreams. By Dr. Charles W. Burr.

Thomas Tryon, self-styled student of physic, was not a physician but wrote exhaustively on the interpretation of dreams as an avocation. The author outlined the interesting manner in which Tryon's writings reflected the strange character of the man as well as the contemporary seventeenth century religious attitude toward science.

February 10

SYMPOSIUM ON THE HISTORICAL ASPECTS OF CARDIOVASCULAR DISEASE

Leopold Auenbrugger and René Laennec. By Dr. E. J. G. Beardsley.

Auenbrugger and Laennec were described as the two outstanding contributors to modern physical diagnosis of intrathoracic disease. Their work was characterized by practical simplicity and by the use of common sense. These qualities were highly recommended to medical students as being the means by which important discoveries in medicine can still be made.

Remarks on Some Early Discoveries on the Circulation. By Dr. Hugo Roesler (by invitation).

A number of important discoveries on the circulation were made by Galen, whose description of the cardiovascular system remained unchanged until the thirteenth century, when Ibn An-Nafis proposed a newer concept of the pulmonary circuit. A century later the introduction of artificial respiration by Vesalius made possible prolonged observation of the living heart in animals. Further modifications of the prevailing views on the lesser circulation were then advanced by Servetus and Columbo, while Aranzio refuted the idea that blood passes through the intraventricular septum. It was Andrea Cesalpino, however, who was the first to appreciate the true course of the blood flow through the entire vascular system. His theory was subsequently confirmed by the classic experiments of Harvey.

Contributors to the Study of Rheumatic Heart Disease. By Dr. Robert G. Torrey.

It was pointed out by the author that our present knowledge of rheumatic fever and its consequent heart disease is the outgrowth of the work of a great many men who attacked the problem from different aspects: bacteriological, pathological, physiological and clinical. The most outstanding advances in this field have been comparatively recent and have been along the line of clinical investigation. The nature and therapy of rheumatic fever, however, still remain far from being completely understood and form one of the important problems of modern medicine.

Pre-Morgagnian Concepts of Cardiac Pathology. By Dr. Esmond R. Long.

Fifteenth century concepts of cardiac pathology, as exemplified by the writings of Benivieni of Florence, were bizarre, but in the succeeding two and a half centuries much fairly accurate knowledge of the morbid anatomy of the heart accumulated. Hypertrophy, dilatation, rupture, aortic aneurysms, vegetative endocarditis, mitral and aortic stenosis, various types of pericarditis, as well as the symptoms and anatomical sequellae of cardiac incompetence were well described before the time of

Morgagni. One of the most serious errors was the importance attached to the large clots found in the heart at necropsy. These so-called "polyps of the heart" were considered ante-mortem products and believed to be common causes of death. Several notable texts devoted largely or exclusively to the heart and its diseases appeared before the publication of Morgagni's monumental work on "The Seats and Causes of Disease."

March 9

Shoe Polish and Medical Bottles. By Dr. Samuel H. Brown.

Thomas Dyott was one of the outstanding medical nostrum makers in Philadelphia during the early part of the last century. Starting as a bootblack, he made bottles in which to dispense his shoe polish, then made medicines to fill the extra bottles. As his business developed, he founded the the Dyottsville Glass Works for the manufacture of glassware, medicines and innumerable other commodities. He reached the pinnacle of his career as the wealthy capitalist head of a very socialistically organized community built around the glass works. Financial difficulties resulted in the loss of his fortune and complete collapse of his great industry. Dyott's life story illustrates how a commonplace substance like shoe polish may develop into an enterprise of gigantic proportions, and it is regrettable that circumstances prevented the survival of his commendable sociologic project.

The History of Our Knowledge of Chromosomes. By Dr. C. E. McClung (by invitation).

The author traced the development of the various investigations which have led to the present knowledge of chromosomes. Of particular interest was the description of the differences between the chromosomes of diverse species and the function of these bodies in the transmission of hereditary characteristics. In this connection the rôle of the genes has only recently been recognized.

April 13

History of Digitalis Therapy. By Dr. Maurice S. Jacobs.

The use of digitalis dates back to antiquity, when the foxglove was commonly included in the popular herbal medicines.

Digitalis was in common use, especially for the treatment of tuberculosis, at the time of Withering, who first rationalized its therapeutic application. Despite the great work of Withering, it is only within comparatively recent times that the value of digitalis has been fully appreciated, and only within the last two decades that it has been systematically administered and accurately standardized.

Pharmacologic Aspects of Digitalis. By Dr. Arno Viehoever (by invitation).

The author described and illustrated the different varieties of foxglove. The development of methods for growing the proper variety of plant and for standardizing the potency of the drug has formed an important chapter in the history of commercial pharmacy. Demonstrated for the audience under the author's microscope, was a new method of biological assay of digitalis by testing the effect of the drug on the minute Daphnia. Microshadowgraphs were presented which recorded extrasystoles due to the action of digitalis on the microscopic Daphnia heart.

May 18

The Annual Conversational Meeting was held in the Library of the College of Physicians.

Dr. Frederick Fraley described the "History of the Establishment of the Nurses' Directory of the College of Physicians." Discussing the difficulties encountered by physicians during the last century in securing nurses when they were needed, Doctor Fraley paid glowing tribute to the great service rendered by the Directory in its early days. Similar groups have since copied its exemplary organization and its invaluable function. The Directory has now been discontinued, but to its founders the medical profession will always remain indebted for their pioneer enterprise.

Dr. W. B. McDaniel, 2d, the Librarian of the College, discussed the authenticity of a notebook believed to have been written by Florence Nightingale, which is in the possession of the Library. It now appears, however, that the notes were not written by Miss Nightingale, but either by a student at her lectures or by someone else who copied them from her book on nursing.

Dr. L. B. Laplace sketched briefly the contemporary seventeenth and early eighteenth century concepts of the circulation as exemplified by the writings of Fernel, Dionis and Douglas.

Dr. Francis R. Packard discussed "Some Famous Anatomists of the Eighteenth Century" including William Hunter, James Douglas, Cowper, Bidloo, Cheselden and Dionis. The works of many of these authors are magnificently illustrated, and their exhibition continues to evoke admiration. The famous quarrels between John and William Hunter, between Cheselden and Douglas, and between Cowper and Bidloo, form the background of an enlightening commentary on the character of these men and of the period in which they lived.

PROCEEDINGS OF THE SECTION ON PUBLIC HEALTH, PREVENTIVE AND INDUSTRIAL MEDICINE

January 31

Preventive Medicine and Public Health: A Résumé and an Inquiry. By Dr. Edith MacBride-Dexter.

The prevention of disease is not a new thought. Man has made efforts to protect himself from disease through contact with others since the beginning of the race, by means of fetishes, charms and prayers. Although these means were ridiculed, more or less rational procedures have gradually come from these experiences.

However, apart from attempts to control transmissible infections, preventive medicine is a development of much less than fifty years of growth. Practically overnight, we have come to realize the importance of timely attention to such conditions as early organic fault, focal infections and pre-cancerous states. We appreciate more than ever the necessity of proper nutrition. Likewise, prevention is expressed in mechanical contrivances employed to safeguard those in industry. The roots of preventive medicine lie in efforts to control or eliminate communicable diseases.

In spite of the early work of such men as van Leeuwenhoek and Jenner, it was not until the latter part of the XIX century, beginning with the researches of Koch and Pasteur, Metchnikoff, Ehrlich and others, that the foundations of present day preventive medicine were laid. Even so, the old notions about pestilential atmospheres and their relations to disease died hard.

The acquiring of definite knowledge as to the causes and means of transmission of some infectious diseases has made their suppression relatively easy. Yellow fever, bubonic plague, smallpox, typhus, typhoid fever, malaria, and tuberculosis are gradually being banished. A death from diphtheria can come only from neglect.

The defensive devices range from vaccines and sera to water purification plants. We have ideal means of immunizing artificially, but the individual must coöperate. Protective measures that can be applied to large groups, without specific consent of

individuals, accomplish most. Quarantine fails for the effective protection of the masses.

In Pennsylvania, state-wide public health endeavor is in its 31st year. During these thirty years, deaths in Pennsylvania from all causes have reached new low levels. However, the death rate is still high from cancer, heart and kidney disease, and tuberculosis among the younger people. Often, in these cases, early diagnosis is the key to control. Also, we owe the individual constant repetition of known facts for his guidance in control of these diseases.

However, to-day, we are still not making maximum use of what we have learned, and too large a proportion of our profession is still thinking in clinical terms only and not of the responsibilities thrust on them by increasing preventive knowledge.

March 2

Teaching of the Practice of Preventive Medicine. By Dr. David L. Edsall.

The laity have complained for years that preventive medicine has not been taught and practiced to the extent it should be. Reasons for this neglect are: 1, doctors have been so engrossed in curative medicine that they fail to consider preventive medicine as an intimate part of their work; 2, they have been taught it but little by those they look upon as authorities—the clinical teachers.

Though preventive medicine is incorporated in the teaching in certain departments, the impression left on the student is that it is an important subject a little alien to practice—more in the domain of the health officer. We must remember that those being trained now will be active for a generation or more, and they must be prepared both to use the existing knowledge and to be able to assimilate the practical value of coming knowledge. And there are signs that the public may visit with disfavor and even penalties the practitioner who does not meet preventive responsibilities intelligently.

The initial step in prevention was taken about 150 years ago, with the work of James Lind and Captain Cook, and then the vaccination for smallpox. These led to no progressive development, as they were the result of the keen insight of certain workers rather than the gradual development of general knowledge.

However, with Pasteur's important work progress came swiftly and in many ways.

A great many developments have since come in bacterial, parasitic and nutritional diseases, and there has been detailed application of knowledge by public health officials to the control of those diseases which needed organized control.

It has been due to the influence of far-sighted clinicians that the intelligent practitioners now think of the hygienic aspects of almost any case. Now, there is no dividing line between curative and preventive medicine nor should there be any. The public often feels that members of the profession are not doing all they might. In the patient's history, a description of his work and the conditions of work are important. Many teachers do not emphasize this, and that point of view is not left with many students.

The laity frequently have the economic point of view. It is important to teach medical students that economics is a more potent factor than medical custom and opinion. Doctors must lead intelligently in matters that have real economic importance or be judged unfavorably by the public. Court judgment has been awarded in cases of local government negligence, and it seems not a far cry to the time when individual practitioners will be subject to penalty for malpractice if they show negligence. While on the economic aspects of preventive medicine it would be well to refer to economic significance in the etiology of certain diseases, the results of nutritional disorders caused by poverty, strain, etc. For many reasons, therefore, the economic aspects of preventive medicine should be studied intensively and taught to both medical and public health students.

The subject of preventive medicine, in so far as teaching it is concerned, is in a formative state. It should be taken up in various places with various methods, and out of these will come a better method than now exists.

Two men, who deserve credit for bringing the teaching of preventive medicine where it is now are Dr. Rosenau, who wrote the first text-book and outlined the first course on the subject, and Dr. Leathers, who took up actual cases with the clinicians, before the students.

A definite department of preventive medicine is essential, as, in any clinical branch, the clinician is not competent to give its

fundamentals or to carry on the research on the subject needed, even in his own field. The subject should be taught so that the impression is left on the student that its practice is already important in frequent and varied ways and likely to be increasingly so. This can be accomplished best by giving the teaching of preventive medicine a place of its own until it is instilled in people's minds, so that later it will be unnecessary to have a separate course and it will become a natural part of the teaching.

None of the courses known of are at all perfect, but during the last ten years the interest of the students (at Harvard) has grown, and they are now talking in preventive terms and enjoying work that once bored them.

May 4

A SYMPOSIUM ON THE PREVENTION OF HEART DISEASE

HEART DISEASE FROM A LIFE INSURANCE MEDICAL STANDPOINT. By Dr. S. B. Scholz.

A historical résumé of mortality statistics as concerns heart disease was presented. The talk was illustrated by charts showing the death rate from heart disease increasing to first place among causes of death, as against tuberculosis, pneumonia, etc., which previously occupied this position.

Longevity studies were made with special reference to the effects of two simple impairments, namely, mitral regurgitation and increase in blood pressure. It was found that the presence of mitral regurgitation alone gave a 15 per cent greater mortality in otherwise normal people. As to the influence of blood pressure, an increase of 10 points in the blood pressure above normal reduced the life expectancy by six years.

Discussion was closed with some reference to the influence of family history on heart disease in general.

RHEUMATIC HEART DISEASE: ITS INCIDENCE AND THE PRESENT STATUS OF ITS PREVENTION. By Dr. O. P. Hedley.

From the studies thus far pursued it would appear that between the years 1930 and 1934 the third largest death rate in Philadelphia was due to rheumatic heart disease, there having been 4600 deaths out of 6100 admissions because of this disease.

The statistics further show that some 75 to 95 per cent of deaths under age 30 in 1933 were due to rheumatic heart disease. As far as the incidence of the disease in general is concerned, it was pointed out that 26 per 1000 draftees were rejected because of the impairment.

The influences which contribute to the incidence of this disease, besides acute rheumatic fever and the related rheumatic diseases, such as chorea, tonsillitis, scarlet fever and growing pains, are: 1. Warm climate, there being less in the south than in the north. 2. Race: less frequent among the negroes. 3. Poverty: more common among the poor. 4. Diet: some question of subclinical scurvy being a factor. 5. Housing and dampness: sunlight, dampness, temperature changes, bad weather are factors. 6. Family history: the work of Paul and others show definitely the familial nature of this disease. Despite these factors, it would seem that the disease is apparently on the decline. As to its prevention, attention to the control of the acute infectious diseases which produce it is important, and when possible the regulation of the influences mentioned above. The speaker felt that the early removal of diseased tonsils would curtail the incidence of the disease.

Prevention of Heart Disease of Middle Life. By Dr. William D. Stroud.

Among the chief causes of this type of heart trouble is syphilis, which still leads in the production of 8 to 10 per cent of all cardiovascular disease. Among the intoxications thyroid stands first; but the largest group is that of the so-called degenerative diseases, the leader among these being coronary arteriosclerosis. Hypertension and renal disease are related to this category.

In considering the prevention of this type of heart disease Dr. Stroud emphasized the effect of the spasmogenic aptitude, which would seem to be the added factor besides the underlying pathology. In general, the correction of diet, mode of living, hygiene, reduction of stress and strain, frequent vacations, elimination of focal infection would seem to be the line to be followed in controlling the incidence of these diseases.

VIRUS DISEASES OF THE CENTRAL NERVOUS SYSTEM WITH PARTICULAR REFERENCE TO LYMPHOCYTIC CHORIOMENINGITIS AND POSTINFECTION ENCEPHALITIS

THE MARY SCOTT NEWBOLD LECTURE XXXVII *

BY THOMAS M. RIVERS, M.D.

VIRUSES, such as the agent causing poliomyelitis, are recognizable, can be differentiated one from another and from other kinds of infectious agents. Consequently, it is incorrect to say that the cause of poliomyelitis or of rabies is unknown. It is true that the exact nature of these agents is unknown, but it is not essential to define completely their nature in order to investigate the effects of their action on the central nervous system.

Recently a new virus disease of the central nervous system of man has been discovered; it is caused by the virus of lymphocytic choriomeningitis. Signs and symptoms of a mild meningitis, e.g., headache, nuchal rigidity, lymphocytic pleocytosis of the spinal fluid, characterize the malady which appears to be a benign one. The virus has been recovered from the spinal fluid and blood of patients; in addition to man, it is capable of infecting mice, guinea pigs and monkeys.

Epidemic encephalitis or Economo's disease usually occurs in winter or spring; the attack rate is highest among people 10 to 30 years of age; sequelae are common; the malady has not been established in experimental animals; the etiological agent is not known, but is suspected of being a virus.

The St. Louis 1933 type of encephalitis was not limited to that city. Furthermore, it was present in the United States before 1933 and is still endemic. It is usually a summer malady; the attack rate is highest in individuals more than 45 years old; sequelae are not common; the disease is transmissable to monkeys and mice and has definitely been shown to be caused by a very small virus.

* Read before the College, October 7, 1936.

Economo's disease and the St. Louis type of encephalitis are certainly caused by different etiological agents and epidemics of them have distinguishing characteristics. Yet the clinical and pathological pictures of individual cases of the disease often are so similar that a correct diagnosis cannot be made without the aid of serological tests.

For a long time it has been known that a few individuals recovering from measles or a person who is being vaccinated against rabies will develop a myelitis or a disseminated encephalomyelitis. In 1922, attention was focussed on this type of involvement of the central nervous system by post-vaccinal encephalitis, or encephalitis following vaccination against smallpox. Now it is known that this type of disease follows vaccinia, smallpox, measles, German measles, varicella, canine distemper, influenza, and antirabic vaccination.

The clinical aspects of postinfection encephalitis are not unlike those caused by certain known viruses, for example the virus of the St. Louis type of encephalitis. From 10 to 50 per cent of the cases end fatally. The patients who recover usually do so completely. This type of encephalitis is characterized by perivascular demyelination, a pathological change not seen in any disease of the central nervous system known to be caused by a virus. The etiological agent is not known; it is probably not a virus.

A disseminated encephalomyelitis has been experimentally produced in monkeys by means of repeated intramuscular injections of emulsions of brain tissue from normal rabbits. This type of encephalitis is characterized by a perivascular demyelination; no infectious agent of etiological significance has been demonstrated.

A recently recognized disease, lymphocytic choriomeningitis, was described; then a few remarks were made concerning Economo's disease and the St. Louis type of encephalitis; and, finally, postinfection encephalitis was discussed and the results of experiments in which an experimental encephalitis in monkeys was produced were given in detail. Viruses are unquestionably responsible for lymphocytic choriomeningitis and the St. Louis type of encephalitis, and it is likely that a virus, definitely different from the two just mentioned, causes Economo's disease or epidemic encephalitis, while it appears unlikely that postinfection encephalitis and the experimentally produced encephalitis in monkeys are

caused by the direct action of viruses. These diseases, caused by different viruses or in some other way, individual cases of which present problems of diagnosis difficult or impossible of solution by means of clinical observations alone, were taken up for consideration in the same lecture in order to emphasize that a clinical differentiation of certain diseases of the central nervous system is not easy.

Tissues of the body—this is particularly true of those in the central nervous system—are capable of responding to injury in a limited number of ways. Thus, it is not surprising that different viruses acting on the brain, cord, and their meninges produce similar clinical pictures. Therefore, since it is no more possible to differentiate accurately one type of virus encephalitis or virus meningitis from another by means of clinical or pathological observations alone than it is to separate one kind of pyogenic meningitis from another without a determination of the bacterium responsible for it, the clinician is forced to seek aid from the laboratory. As yet, however, laboratory workers lack sufficient knowledge of this field to render much help to the clinician, but they are continually striving to overcome this deficiency.

SYPHILIS FROM A PUBLIC HEALTH POINT OF VIEW

THE JAMES M. ANDERS LECTURE

BY THOMAS PARRAN,

*Surgeon-General, U. S. Public Health Service, Washington, D. C.**

Suppose some strange new epidemic had broken out in Philadelphia last year, most prevalent among young adults but attacking all age groups from the babe to the grandparent—all classes, rich and poor, ignorant and intelligent; whenever an individual was exposed to it. Suppose this disease, if untreated, were particularly horrible in its effects, bringing with it blindness, insanity, paralysis, failure of the heart and blood vessels, death of the newborn.

Suppose again that this disease had gone unchecked and that at the end of the year, there were almost 20,000 cases in Philadelphia—that in the total of its many forms, it ranked first as cause of death among you—that untreated or poorly treated cases were crowding your charity hospitals, your institutions for the chronically disabled, your jails and your madhouses.

Ladies and gentlemen, an epidemic of those proportions, a strange, new epidemic, would not be allowed to run for a year without a public uprising. Practising physicians, research men, the state and city boards of health would call frantically upon one another and upon the Public Health Service in Washington for help. Together you would have worked day and night to check the epidemic. You would have used every modern means of communication to inform citizens of the best methods by which they might avoid the plague. Every doctor who has seen his community through an infantile paralysis epidemic, for example, will remember with what eagerness mothers and fathers read every scrap of information in the newspapers about the disease they fear —how they listen to the radio, bombard the doctor and health officer with questions and form citizens' groups to further in every possible way the campaign of control.

* Read before the College, November 4, 1936.

So, as I said before, a new and strange epidemic would not have gone on for a year in Philadelphia, without public demand for organized action against it—and the public would include doctors in their capacity as citizens. And if by chance it were discovered that Philadelphia need not have suffered this epidemic at all, that the disease can be prevented—that there was a not very complicated and fairly efficient medical means by which if treated early enough, practically all infected persons could be cured of the disease, without suffering the terrible end results that I have described, and whereby every infected person could be rendered absolutely harmless to others—if that were the case, I fear that such public action would be directed rather drastically against those who had such knowledge and failed to use it.

I think that I have not exaggerated to any extent in outlining for you this hypothetical situation. Yet there is no similar excitement in your attitude concerning the disease of syphilis which is not new, but old among you; and is not only a plague of the city but of the State and nation as well. There is more of it than scarlet fever, twice as much as tuberculosis, a hundred times as much as infantile paralysis. It is responsible for 10 per cent of all insanity, for 18 per cent of all diseases of the heart and blood vessels, for most of the stillbirths and many of the deaths of infants in the first weeks of life.

To a visitor from some other planet, unfamiliar with our civilized taboos, it would be inconceivable that we could tolerate such a plague as syphilis in our midst, although for thirty years, since Wassermann developed his blood test for the diagnosis of syphilis, and for twenty-five years, since Erlich discovered salvarsan, we have possessed the means of finding syphilis and of rendering victims promptly non-infectious.

Since its founding as a Marine Hospital Service in 1798, the United States Public Health Service has had a direct concern with the problem of syphilis which together with the other important venereal disease, gonorrhea, has long been a major cause for admissions to the marine hospitals. As early as 1908, the Public Health Service prepared a short article on venereal disease intended for publication and distribution, not among the general public but among patients in our marine hospitals. However, when it was submitted to the Treasury Department for publication, the article was returned disapproved by the then secretary on the

ground that the subject matter was offensive and its publication was not in keeping with the dignity of the fiscal department of the government.

Within ten years we were at war and Congress had created a division in the Public Health Service to cooperate with the States in their control of venereal diseases, to conduct research, and to educate the public. A good beginning was made. Unhappily, however, at the end of the war, federal appropriations ceased and the subject again lapsed into the obscurity in which these diseases flourish; for the spirochete, which causes syphilis was not demobilized with the American Expeditionary Force. There was an abundance of it in the population to begin with and wars always have promoted the spread of the venereal diseases. Dr. Ray Lyman Wilbur has said:

> "When we can keep the spirochete of syphilis out of the body of every new-born babe we shall have added enough to human life and happiness to heal the wounds of the great war!"

Year by year since the war, however, there has been a slowly growing interest in and appreciation of the importance of this problem. Evidence has been piling up that other countries have reduced the prevalence of syphilis by bringing the subject into the open and attacking it along scientific lines. In the Scandinavian countries, for example, it has become a rare disease. But there, it must be noted, "all persons infected with syphilis have a right to demand free treatment but equally are obliged to submit to treatment."

Though less progress has been made in England than in Scandinavia, nevertheless new cases have dropped from 40,000 in 1920 to about 20,000 last year—a cut of 50 per cent. England does not require the syphilis patient to take treatment, but good treatment is abundant and freely rendered.

In this country there is nothing to show that the amount of syphilis is decreasing. A few forward-looking spirits saw the situation in its entirety years ago. Sir William Osler, in 1917, in the Annual Oration before the Medical Society of London, said:

> "Many years ago . . . I came across Bunyan's phrase the "Captain of the Men of Death" which "caught on" in the literature. At one day it may have been true of consumption; it is so no longer; the headship in temperate climates belongs undoubtedly to syphilis."

Osler then went on to analyze the mortality reports of the British Ministry of Health for the preceding year, demonstrating that in spite of the fact that syphilis reported as such stood tenth among the causes of death, actually it would rank first if there were attributed to it the deaths it causes which appear on the certificate of burial as diseases of the heart and circulatory system, of the nervous system, stillbirths, and many others.

Today and in our own country the story is about the same, for unjust as it often is, and scientifically dishonest as it certainly is, the social stigma attendant upon syphilis has been such that in deference to the sensibilities of his patient, the humane doctor rarely designates syphilis as the cause of illness or death. This has made necessary a series of special investigations, going behind official records of deaths and reportable illness, which give us at least an idea of the minimum amount of clinically recognized cases. It is impossible to estimate with accuracy the amount of hidden and untreated syphilis in a community. It is relatively simple to determine the amount of an acute disease of short duration occuring in any stated period, but this is more difficult with a chronic infection of long duration, especially when a considerable proportion of cases is not discovered until months or years after onset. The gross estimates I have given you, staggering as they may seem, are minimal, not maximal!

One method of estimating disease prevalence is to determine the total number of cases under treatment by physicians and clinics on a given date. Other data are available as a result of routine Wassermann tests of various groups of the population, but this method has its drawbacks since one is not sure that the sample is truly representative of the population as a whole. For example, hospital admissions represent sick people, mostly adults; and surveys of industrial groups or of college students give selected age groups.

Based upon the known number of cases under treatment by physicians, hospitals, clinics, etc., in considerable areas of the United States, and based upon case records submitted by physicians in other selected communities as to the new cases which are diagnosed for the first time during a one-month period, the Public Health Service has estimated that there occur approximately one half million cases in the United States each year. The last reliable information concerning Philadelphia was gathered more than

six years ago at which time there were reported, by a census of cases under treatment, in this city a total of 9,082 patients.

Of this number, there were in the early stage of the disease (less than one-year's duration) 2,702 cases. Public institutions were caring for 61.1 per cent of the total, while physicians were treating as private patients, 39 per cent. Expressed differently, one can say that of every 10,000 people in the city, 44 are constantly under treatment on account of this disease, and a large, but unknown number untreated or depending on quacks and drug-store medication. If the new cases accepted for treatment for the first time in January, 1929, is a fair index, there occur each year in Philadelphia approximately 19,344 cases of syphilis.

The yellow fever epidemics of 100 years ago in this city disrupted commerce, caused the removal of the government, brought panic and even paralysis to the life of the city. Yet these epidemics of yellow fever were sporadic, and less disastrous in their cumulative effect than the epidemic of syphilis continuing year in and year out.

Suppose Philadelphia had almost 1,600 cases of smallpox every month. Would the medical profession and the citizens permit such an epidemic to go unchecked?

Contrary to popular belief, syphilis is no respecter of class or station of life. No family tree is free of it. It is more prevalent, of course, among the more ignorant groups of the population, partly because of their way of life and largely because of the unavailability of medical care in many communities for this as well as their other illnesses.

There are other diseases such as the common cold or cancer which are important as a cause of illness or of death, and a source of great economic loss. Medical science has not yet given us tools with which to control effectively some of these conditions. Not so with syphilis! Science has given us three crucially important facts which make it possible to control this disease. I refer, *first,* to our ability to diagnose the disease under a microscope just as soon as the case is infectious and when it is most readily cured. *Second,* there are blood tests which after the first few weeks reveal the infection in all except the less active stages. And *third,* in the salvarsans or the arsphenamines we have the means which will speedily sterilize the case. Remember, however, that there is a difference between a temporary sterilization of the

patient (by sterilization, we mean rendering the patient non-infectious—not dangerous to others), and permanent cure or arrest of the disease. To sterilize a patient is a matter of days or even hours, to arrest or cure the disease is a matter of months or years.

It seems simple, then, does it not, to apply our knowledge and render the patient incapable of spreading the infection. All we need is to find the case, the infectious case, early in the course of the disease and bring this case under treatment. Yet it appears that a majority of the clinics in this city, and the same is true in other cities, take no interest in getting at the source of infection or the contacts of patients who apply, nor do they or anyone else see to it that an infectious patient continues under treatment. Lack of public knowledge, and I believe it is lack of knowledge and not indifference, is chiefly responsible for our failure to do what we know how to do.

Except for one of the stipulations under which the James M. Anders lecture was established, that the speaker should be "from a distance," it would be presumptuous for me to appear here in this center of medical learning to discuss the subject of syphilis; for Philadelphia has produced some of the finest clinical and laboratory work of our day in syphilis.

In the public health or mass control aspects of syphilis, you have made less progress, and in selecting a subject for this James M. Anders lecture, I was impelled to choose syphilis as the topic, not only because it is our foremost public health problem, in Philadelphia as elsewhere, but also because from what I know of the life and work of Doctor Anders, I am sure that had his clock of time been set forward another quarter century, he himself would have been in the forefront of those medical leaders who today are seeking co-ordinated public and private action against this scourge. His interest in the control of smallpox; his leadership in the tuberculosis campaign; and his participation as a member of the Philadelphia Board of Health in many phases of public health action—his whole career reveals a breadth of interest which inevitably would have cast for him an active part in the control of syphilis—which today stands first among the plagues we know how to control, but do not.

For the control of syphilis is possible. To accomplish it, however, the interest and the participation of all the people is necessary. The doctors and health agencies alone cannot do it. It

requires public participation of the sort that will educate all victims of the disease and provide treatment for those unable to obtain it.

The medical profession nevertheless carries the heaviest responsibility. First, every practicing physician must have the ability to recognize syphilis and the ability either to treat the disease competently or to refer it to those who can. Recognition of the disease means what Dr. Stokes has termed "a higher index of suspicion." Dark-field examinations should be made on all suspicious lesions. In every case of doubtful diagnosis, the presence of syphilis should be positively excluded. If a doctor treats syphilis, he accepts a further responsibility; first, to notify the case to the health department, and for the early case, to seek out the source of infection by every possible means, and the contacts since infection, or to permit the health department itself to do it; second, to insist that the patient continue treatment until cured, and if the patient lapses in treatment, to notify the health department of that fact; third, to make a routine Wassermann test on all cases presenting a doubtful diagnosis, on all routine and periodic physical examinations, and particularly on all maternity cases. Here in Philadelphia in 1929, Emerson has shown the importance of routine Wassermann tests on pregnant women. One group of your hospitals made a Wassermann test only when the history or physical examination led to suspicion of syphilis and found only 12 in 19,411 patients. Another group of hospitals made routine tests on all patients serving the same class of clientele. This group discovered 112 among 2,559 patients. Do you still have two groups of hospitals judged by this standard?

The health department too must do its part. Under our American system of medicine, it should not be necessary for the health department to give treatment to all cases. From public taxes, however, certain minimum facilities should be provided. Satisfactory blood and spinal fluid tests freely available to all physicians is the first requisite. Because so many patients can scarcely afford to pay physicians' fees, the furnishing of free drugs for the use of doctors in treating patients is a desirable subsidy to medical practice. More than this, the health department is in the position of sailing a ship without a chart or compass until it receives notification of all cases of syphilis. It is not necessary that the name of the patient be given. The initials

of the patient and date of birth will serve for all except the vicious spreader of the disease and the lapsed case, when the doctor or the doctor and the health department takes responsibility for getting at the source of infection and contacts of the early case. Recent evidence from New York State shows that it is practicable to follow up early cases, to get at the sources of infection, and to bring a satisfactory proportion of these sources under treatment. To do these things, however, means competent personnel and funds.

But, you may say, these things cost money; we cannot afford it. Neither this nor any other city can afford *not* to tackle this job. You taxpayers are bearing the cost of syphilis. Whether you will it or not, you are bearing the cost in pensions for unemployables, for the support of chronic syphilis in your institutions, for the support of the syphilitic insane in your mental hospitals, for the support of those made blind by the disease, and for the support of those dependents where the wage earner has died of syphilis. Is it not sound business policy to spend some of this money to prevent and control the disease? We have heard little complaint concerning the cost of eradicating bovine tuberculosis, yet in all probability, the cost of eradicating syphilis as a public health menace is not so great.

This, then, is the task, not only of the doctor and the health officer but also of the citizen, the taxpayer, the father and mother, whether they are concerned about their own health, the health of their family, or only about the tax bill.

THE RELATION OF BENIGN BREAST LESIONS TO OVARIAN DYSFUNCTIONS

THE MÜTTER LECTURE *

BY GEORGE P. MULLER, M.D.

(No abstract)

* Read before the College, December 2, 1936.

PROCEEDINGS OF THE SECTION ON OPHTHALMOLOGY, OCTOBER TO DECEMBER, 1936

October 15

Dr. William J. Harrison: "Suspected Neoplasm of the Choroid." Exhibition of Case.

Discussion by: Dr. Zentmayer, Dr. LeFever, Dr. Langdon and Dr. Appleman.

Dr. James H. Babbitt and Dr. H. Maxwell Langdon: "A Case of Retrobulbar Neuritis Secondary to Ethmoidal Infection."

Discussion by: Dr. Babbitt and Dr. Buchanan.

Dr. Edmund B. Spaeth: "Pathogenesis of Unilateral Exophthalmos."

Discussion by: Dr. Fry.

Dr. Joseph Waldman (by invitation): "Preliminary Report on Fifteen Cases of Retinoblastoma."

Discussion by: Dr. Fry, Dr. Buchanan and Dr. Zentmayer.

November 19

Dr. Henry O. Sloane (by invitation): "A Case of Coloboma of the Optic Nerve and Choroid." Exhibition of Case.

Discussion by: Dr. Zentmayer and Dr. Chance.

Dr. William Zentmayer: "Dr. T. B. Holloway—An Appreciation."

Dr. Burton Chance: "Early Days of Ophthalmology in Philadelphia."

Dr. Joseph V. Klauder: "The Interrelation of Ocular and Cutaneous Diseases." A Lantern Slide Demonstration.

December 17

Dr. M. Luther Kauffman (by invitation): "Anomalous Venous Distribution on Disc." Exhibition of Case.

Discussion by: Dr. Zentmayer.

Dr. Alfred Cowan: "Exhibition of Four Cases of Corneal Distrophy Occurring in One Family."

Discussion by: Dr. Zentmayer.

Dr. C. E. G. Shannon: "A Case of Ocular Muscle Palsies Associated with Toxic Goitre." Exhibition of Case.

Discussion by: Dr. Zentmayer and Dr. Langdon.

Dr. Walter I. Lillie and Robert H. Peckham, Ph.D. (by invitation): "The Four-Mirrored Haploscope, a Description and Demonstration."

Discussion by: Dr. Lillie and Dr. Cowan.

PROCEEDINGS OF THE SECTION ON OTOLARYNGOLOGY, OCTOBER TO DECEMBER, 1936

October 21

Dermoid Cysts of the Head and Neck. By Dr. Gordon B. New.

During a period of twenty-five years 1,495 patients with dermoids were examined in the Mayo Clinic. Of these 103 or 6.9 per cent occurred about the head and neck.

We have divided these latter into four groups. 1. Those about the eyes and orbits, originating along the naso-optic groove. 2. Thóse about the nose, resulting from the intrusion of the fronto-nasal plate between the embryonic nasal dermis and mucosa. 3. Those about the floor of the mouth, submental and submaxillary regions, originating from the upper brancial arches and 4, a miscellaneous collection, most of which occur in the midline and develop during the closure of the midventral and middorsal lines of the body. Of these 103 cases, group 1 constitutes 49.5 per cent, group 2, 12.6 per cent, group 3, 23.3 per cent and group 4, 14.6 per cent.

From a pathological study of the cases, it appears that practically all dermoids about the head and neck are very simple cysts of the congenital inclusion type. As is shown in table 1, 37.2 per cent of the tumors were present at birth while 62.7 per cent were observed by the fifth year.

On palpation the smaller cysts were quite firm but the majority were soft and cystic. In the large tumors a doughy feeling, so characteristic of a dermoid cyst, was present.

The treatment is excision. This is not without difficulty as they often are attached firmly to the underlying periosteum.

Discussion: *Dr. Oscar V. Batson:* Showed slides made from moulages of Dr. Luongo's case of Dermoid Cyst of the Nose. "In regard to the Thyroglossal Duct it is remarkable how many can be found when we look for them and how easy without special attention they may escape observation in the Anatomical Laboratory."

Dr. Robert J. Hunter: The differential diagnosis between a Dermoid Cyst and a Mucocele is illustrated by a case at the Philadelphia General Hospital here pictured. It was first diagnosed a

Dermoid, but later a Mucocele because of its position in relation to the frontal sinus, occurrence after an injury, and absence of flutuation and pain. It was translucent to transillumination and caused erosion of the frontal plate. At operation it was found filled with a gelatinous fluid and on section ciliated epithelium lined its cavity.

Dr. Warren Davis: The seven cases of Dermoid Cysts on the dorsum of the nose in my collection, were attached to the fronto nasal suture and their openings were anywhere from the tip to the root of the nose.

Certain Aspects of Surgical Meningitis with Special Reference to Petrous Pyramid Suppuration. By Dr. Mervin C. Myerson.

Sections of petrous bones of varying degrees of pneumatization were shown on the screen. It was pointed out that an infection could resolve after its congestive stage or could proceed into the apical region as an osteitis or osteomyelitis. This might either subside or proceed to an empyema of the apex cavity. In a smaller group of cases the infection would involve the petrous bone by means of the venous channels, the end result of which was usually a fatal meningitis.

The x-ray findings are definite. Lantern slides were shown. Whenever there is a loss of the continuity of the roof of the petrous apex we can be certain that an empyema of the apex exists and that the temporal lobe is corking the abscess. When the apex cavity is filled with a granuloma the shadow of the apex cavity extends above the line of its roof through the break.

Inferior aspect infection can be diagnosed by the x-ray film, taken in the Stenver position, being negative, while the mento-vertical or Taylor position is positive for destruction of bone in the apex.

Cases of empyema of the apex constitute the surgical and curable group, though it would appear, that only those in which the disease spreads through the bone by a slow and continuous process and where the formation of pus is a predominant feature, are amenable to cure by well directed and timely surgery. A variable period of time may elapse during which there are no symptoms pointing to disease in the petrous bone.

An operation for dealing with infections of the inferior aspect of the petrous apex was reported and illustrated by means of lantern slides. The operation consists of reaching the inferior

aspect of the petrous pyramid through the retropharyngeal space by means of an incision high and along the anterior border of the sternomastoid muscle.

Discussion: *Dr. Bernard P. Alpers:* Neurologists do not see many of these cases. I would think it might be difficult to differentiate between a Gradenigo's Syndrome, clearing spontaneously and a Petrousitis. I am interested in the method of spread to the petrous tip by erosion for it is true that relatively few spread to the subdural space with extension along the nerve sheaths to produce subdural abscesses. It seems curious that many more of these infections spread by the superior labyrinthrine route and few by the lower continuity of spaces.

Dr. George M. Coates: Until a few years ago many aspects of petrous infection were not understood. The development of the petrous pyramid is like the mastoid process, hence the diploe are subject to the same kind of infection. Gordon Wilson of Chicago believes that it is not so much a question of pneumatization as a cause for petrous tip infection as it is a spread through the diploic spaces. We have known that the cellular mastoid when infected often gets well without operation and so petrous apex infection can clear without operation if made of cellular bone. As evidence of this many long continued ear discharges get well after suddenly discharging profusely. In operating on these cases it is important to know what type of bone is present and whether the fistula from the tip may discharge superiorly or inferiorly.

Dr. Mathew S. Ersner: Though by the Coronal-Mental position we can get an x-ray picture of the superior part of the petrous pyramid and by the Taylor position a lateral view yet the only way we can be sure of determining cavitation is by postmortem examination. One thing we can tell by x-ray is congestion or inflammation of one petrous by contrasting with the other. Any patient suspected of having petrousitis and having headache and temperature should have a retropharyngeal examination. If we have a case of petrousitis let us not wait and hope that healing may occur spontaneously, but operate and follow the various tracts which will probably lead to the path the pus has taken.

Dr. Oscar V. Batson: In the anatomical laboratory I find the pneumatic petrous tip reasonably rare.

November 18

Acute Mastoiditis, with Extra Dural Abscess. By Dr. E. W. Kemmer.

On the first of August 1935, thirteen year old M. B. went swimming and developed an earache. Two weeks later his right ear began discharging. On the fifth of September he developed

a tender postauricular swelling. On admission to the hospital, September 10, 1935, he was restless, sluggish, incooperative, and had severe pains in the right ear.

Examination showed the left ear normal, but from the right ear there was a tenacious, purulent discharge. The drum was perforated, the posterior canal wall was sagging and there was swelling, redness and tenderness over the upper portion of the mastoid area.

X-ray examination showed definite clouding of the right mastoid area with suggestion of cell wall destruction in the zygomatic area.

On September 13 a simple mastoidectomy was done. The mastoid cells contained very little pus (streptococcus hemolyticus) but were sclerotic (probably due to chronic mastoiditis). A channel was discovered through the upper portion of the necrotic plate and a small collection of pus was found between the dura and the skull.

On September 23 the patient became drowsy and difficult to arouse. Projectile vomiting and frontal headache developed. The neck became somewhat rigid and Kernig sign was exaggerated on the right.

Blood culture was positive for streptococcus hemolyticus and the spinal fluid pressure was 50 mm., with 513 cells per cc. The Schilling's shift was to the left.

The mastoid wound was opened. The dura was incised and two or three ounces of pus was evacuated. A soft rubber drain was inserted and the wound was irrigated with warm boric acid solution daily.

He was discharged from the hospital October 25, 1935, in excellent physical condition and returned for observation several times (last visit October 16, 1936). He has apparently been in perfect health.

Discussion: *Dr. Karl M. Houser:* The lessons to be learned by this case are 1, not to be over zealous, 2, get adequate drainage and maintain it. We used the largest calibre rubber tube obtainable and irrigated very gently.

Dr. George M. Coates: In the *British Medical Journal* it is said that about 24 or 25 per cent of these cases recover. The abscess in this case must have been very large and may have antidated the Mastoiditis. It is usually the capsulated abscesses which recover. Dr. Houser is quite right in considering this case not entirely safe until more time elapses.

Dr. James A. Babbitt: A number of years ago a hospital patient treated in collaboration with Dr. Fay showed a poorly discharging Mastoid with cerebral symptoms. The Mastoid was opened several times and a subdural abscess drained. He finally got well and redeveloped working ability, but one day there was a notice in the paper of his suicide.

Dry-Ice (Carbon Dioxide Ice) Burn of the Throat. By Dr. Philip S. Stout.

Earle C., fifteen years old, on July 31, 1936, swallowed a piece of dry ice. He immediately began to choke, cough, gag and finally vomited, which brought out the dry ice. His face became red and swollen and he complained bitterly of a burning in his throat. His parents gave him olive oil, white of eggs and milk, but he could hardly swallow.

Three days after the accident he still had considerable pain in his throat and much trouble swallowing. His face was still swollen. Examination of the throat showed a slightly mottled appearance, but no ulceration on the posterior wall near the larynx. Painful swallowing lasted about a week.

Carbon dioxide ice is —65 to —70° C., or about —110° Fahrenheit. A number of those working with it complain of neuritis of hands and arms. Presentation of patient.

A Case of Osteoma Growing from the Mastoid Cortex. By Dr. George M. Coates.

Osteoma seen by the Otolaryngologist is usually found in the lumen of the frontal sinus or in the ethmoid capsule, whereas, osteoma of the mastoid cortex is a rarity.

The patient, thirty-one years old, first noticed a painless swelling on the left side of his head, behind the ear, in 1927. It seemed to grow slowly. X-ray examination in 1932 disclosed a small, bony tumor-mass about 1.5 c.m. in diameter, located at the superior-posterior angle of the left mastoid. It was circumscribed and extended in to the diploe, but was not invasive.

On June 23, 1936, under avertin anaesthesia an incision was made directly over the mass. The skin and periosteum elevated easily. A flat chisel was placed at the junction of the tumor with the cortex and three light blows of the mallet were sufficient to partially separate it from the skull; it was then pried loose with

the chisel and came away easily leaving the hard outer table of the skull smooth and with its normal contour.

X-ray examination eight weeks after operation showed the bone to be quite healthy in this area.

The pathological report was as follows: "The tissue shows compact bone with small narrow spaces filled with fibrillar connective tissue. There is no fat in these spaces."

Discussion: *Dr. Mathew S. Ersner:* In a similar case several years ago traumatism seemed to be the causative factor. I wonder if such conditions may be related to exostoses, such as we see in the external auditory canal.

Dr. George M. Coates: I do not know what was the cause in this case. There was no history of traumatism. It was distinctly a bony tumor with a definite line of cleavage under the periosteum and not an exostosis.

Myelogenous Leukemia with Infiltration of the Labyrinth with Loss of Hearing. By Dr. Horace Williams.

The occurrence of leukemia is probably more frequent than is generally supposed and the principal symptoms of the acute form are sometimes largely referred to the ear, nose, throat and mouth. Typical symptoms are hemorrhage from the nasal mucous membrane, edema of the gums and bleeding with or without extraction of teeth and areas of necrosis in the mucous membrane of these regions, resembling Vincent's infection.

Symptoms referred to the ear may be due to hemorrhage in the external meatus, leukemic infiltration or hemorrhage in the mucous membrane of the middle ear and the same process in the external ear. Hemorrhage in the internal ear begins suddenly with vertigo, tinnitus and nerve deafness.

The case reported was a colored man of fifty years admitted to the Germantown Dispensary and Hospital on May 16, 1933, complaining of sudden deafness, headaches, tinnitus, vertigo and general weakness. He was quite well until about a week before except for weakness during the last year.. Three days later he became suddenly deaf bilaterally.

Hearing tested with magnesium fork 50/100 showed right 5/8, and the left 6/8. There was a total loss of cochlear and vestibular function on both sides. Bilateral exophthalmos had been present for some time and scattered throughout the left ocular fundus

were several fairly large hemorrhages with pale or yellowish centers. There was incoordination in his gait and he occasionally fell laterally. This was not intensified by closing his eyes.

Blood examination showed R.B.C. 3,960,000 with many nucleated red cells and W.B.C. 182,000.

Differential count showed Blast cells (undifferentiated) 17 per cent, Myeloblasts 17.5 per cent, Myelocytes 32 per cent, Juvenile cells 21 per cent, Segmented forms 11.5 per cent.

He exhibited a low grade fever around 99 degrees for twenty-one days which rose to 104 degrees and he died on the twenty-fourth day.

At autopsy large numbers of myelocytes were found in the liver, spleen, adrenals, pituitary, brain and temporal bone. The latter showed infiltration with myelocytes in the cristae, maculae, cochlear parts and about the external meatus as well as the mastoid process and mucosa of the eustachian tube and middle ear.

Since in Leukemia there is such a general myelocytic infiltration one wonders why the eyes and ears are not involved in every case.

Discussion: *Dr. Walter Hughson:* Showed sections of the temporal bone, on the screen, pointing out infiltration with myeloid cells, atrophy of the cochlear nerve, spiral ganglion and organ of Corti. Myeloid infiltration and blood extravisations were shown in the labyrinth and horizontal canal. Other cochlear sections were shown from experimental animals with partial destruction of the nerve and organ of Corti. It is believed that the deafness in the case reported was not due to the Leukemia, but to the vestibular destruction coincident or preceding the Leukemia. Some of the extravisation was postmortem.

Dr. Robert L. Pitfield: When this man came into my wards I thought of the words of the late Dr. William Pepper that Leukemic patient's deafness was due to extravisation. Examination of this man was very difficult because of extreme nervousness, but the laboratory made the diagnosis. X-ray treatment was given, but did no good.

December 16

Acute Sinusitis: Osteomyelitis of the Skull: Brain Abscess: Recovery. By Dr. George B. Wood and Dr. Francis C. Grant.

This patient, a graduate nurse, 24 years of age, had no previous history of sinus trouble and her general health had been good. Having just recovered from a long siege of grippe with upper

respiratory infection she returned to duty the day before this admission, April 24, 1936.

She complained of severe left frontal headache with distinct edema of the left upper lid, tenderness over the floor and supra-orbital region of the left frontal sinus. There was nasal congestion and pus in her left middle meatus. Edema spread over the brow half way to the hairline, but involved only the left side. There was a moderate amount of exophthalmos.

X-ray examination showed cloudiness over the left antrum and a shadow in the lower portion of the left frontal sinus.

On incision there was no pus in the orbit. Opening through the floor of the frontal gave only a little serum, but following this operation the patient showed marked improvement. A Freeman drainage tube was put into the left maxillary sinus and a large quantity of purulent material washed out.

On May 13 she vomitted and complained of occipital headache. The neurological examination now showed some evidence of meningeal irritation with slight nucal rigidity, right sided Babinski and a left Koenig.

Injection of lipiodol into the frontal sinus showed that the tube was only draining the central portion of the sinus and there was occlusion of the normal opening. X-ray report on the 14th showed definite osteomyelitis involving the upper lateral margin and the anterior posterior wall of the left frontal sinus.

On May 15 Dr. Grant did a left frontal craniotomy and the osteomyelitic condition of the frontal bone was distinctly evident. Above the frontal sinus there was an extra dural abscess. The frontal sinus itself was filled with granulation tissue partially organized in the lower portion towards the ostium.

On the 25th she had for the first time a distinct papilledema and in the next day or so she developed a right facial palsy, and weakness in her right hand and leg.

On the 28th Dr. Grant made a trephine opening through normal bone and dura, introduced a canula into an abscess, evacuating about 30 cc. first of yellowish turbid fluid and then thick yellow pus.

She did fairly well for two days but then became stuporous and her pulse dropped into the forties. On the 30th Dr. Grant opened the old frontal wound and entered the abscess, introduced a piece of rubber dam and packed its interior with iodoform gauze.

She did not do very well after the operation and on the 8th started vomitting again with increase in headache. Spinal puncture showed 330 cells—59 per cent polys.

There had been a gradual increasing herniation of the brain becoming very marked so the ventricle was tapped. For awhile, despite daily spinal taps, the herniation increased, but by the 21st seemed to be decreasing. After the 28th there was a gradual recession of the hernia and very distinct improvement in the patient's general condition. The patient was shown.

Discussion: *Dr. Francis C. Grant:* The x-ray evidence was proof of osteomyelitis and my belief in such instance is to get beyond it and remove all of it. The question of brain abscess was first to find it. This was done through a trephine opening by introducing a canula. Had we gone through infected dura we might have caused infection without finding the abscess. Having tapped it we partly drained it.

There are three recognized ways of dealing with a brain abscess: 1. According to King, opening the abscess and accepting the brain hernia. 2. Tapping the abscess and putting in a drain. 3. According to Dandy, tapping the abscess without introducing a drain and letting the surrounding edematous brain close down on the abscess.

In this case we did not open the abscess until waiting and as it happened, striking at just the proper time. This is best according to King, for superficial abscesses and those involving the speech area. Edema of the brain everted the abscess and caused a Fungus Cerebri which at its height extended two inches beyond her forehead. Encephalograms ruled out other abscesses and repeated tappings of spine and ventricle eventually reduced the hernia.

Dr. George M. Coates: In the past few years we have been told that the way to avoid osteomyelitis in these cases is to enter the frontal sinus through the floor. I prefer to go through the outer table for better inspection of the sinus.

Dr. George M. Coates: Moving Picture Demonstration of Laryngeal Pathology: Films shown were those of Dr. Lejune of Taulane University.

Dr. Henry Dintenfass: Moving Picture Demonstration of Correction of Hump and Long Nose.

Dr. R. A. Luongo (by invitation): Moving Picture Demonstration of External Frontal, Ethmoid and Sphenoid Operation.

PROCEEDINGS OF THE SECTION ON GENERAL MEDICINE, OCTOBER TO DECEMBER, 1936

October 26

Plantain Hay Fever: Its Incidence and Importance. By Dr. George Blumstein and Dr. Louis Tuft.

This study was begun in 1934 in an effort to evaluate skin reactions to this pollen. At first it was impossible to relegate it to its proper place because the grass season coincides with the pollinating period of plantain. With the development of the dry pollen nasal test we had at our disposal a means of differentiating the etiologic factors in each case.

All hay fever patients coming under our care at Temple Medical School were studied with an effort to establish the meaning of positive skin reactions to plantain. This was done by performing the eye and nasal dry pollen tests on each and every case, by doing passive transfers and by a check-up during the plantain hay fever season. In order to determine the antigenic relationship between the various plantains, neutralization in vivo and in vitro were performed.

Of 213 cases of hay fever, only 180 were studied completely and will form the basis of this report. The following is a table showing the incidence of skin reactions in the various types of hay fever, the number of ophthalmic and nasal tests performed and the percentage of clinically sensitive plantain cases. It will be noted that moderately positive skin reactions occurred in 28.3 per cent of cases and that clinical sensitivity was present in 14

Type of hay fever	No. of cases studied	No. of mod. or marked skin reactions to plantain	No. of eye and nasal tests performed	No. of clinical cases
Fall	110	20	68	—
Spring	40	17	19	7
Spring and Fall	30	14	18	7
Total	180	51 or 28.3%	105	14 or 7.7%

of 180 cases or 7.7 per cent. We encountered 5 cases of pure or uncomplicated plantain hay fever, a condition that is usually considered uncommon. All the clinically sensitive cases demonstrated the presence of reagins by passive transfer methods (Prausnitz and Kustner).

Eight of the sera obtained were neutralized in vitro with one of the plantains, passively transferred and tested with the other plantain. In this manner we were able to prove that antigenically, the common and English plantain are identical.

Observations during the pollinating season corroborated our clinical impression and we were gratified at the excellent results obtained by hyposensitization in this group.

Critical Analysis of Animal Dander Reactions. By Dr. Samuel E. Rynes.

Statistical analysis of approximately 600 confirmed skin reactions to dander in approximately 400 different individuals; age incidence; allergic diagnosis; clinical confirmation of reactions by actual contact; therapeutic results; effect of side reactions and infections.

Patch Testing with a Volatile Solid-contact Dermatitis. By Dr. Arthur Baker.

Patient developed generalized contact dermatitis following exposure to fumes of dichloricide, a moth killing volatile crystalline substance. Patch tests made with a small box containing the dichloricide separated from the skin by two perforated layers of cellophane were positive. A mild generalized sunburn 8 weeks later caused an exacerbation of the dermatitis in the exact area of the patch test.

A Case Report of Ragweed Dermatitis. By Dr. Joseph F. Ricchiuti.

Adult, male, age 52, with eczema of arms, face and popliteal spaces for 18 years. Has bronchial asthma throughout the year. Eczema begins about Aug. 10 and lasts until October, gradually disappearing and eventually recurring the next year. No hay fever symptoms. Diagnosis confirmed by patch test with ragweed leaf producing typical lesion.

Active Immunization of Allergic Individuals Against Tetanus. By Dr. Herman Gold.

A group of 31 patients suffering from hay fever and bronchial asthma, were actively immunized against Tetanus by means of 2 injections of Tetanus Toxoid, alum precipitated refined. Some of the patients received as many as 4 injections. One group received 0.5 cc., while the other was given 1 cc. of the antigen, at each injection. The interval between injections was varied from one week to six months, in order to determine the optimum interval of time necessary to bring about the required antitoxin response. Control and follow up bleedings, from two days to eight months after the "secondary stimulus" was injected, were done to determine the height as well as rate of antitoxin production. Comparative values for actively immunized, normal individuals, as well as those following passive immunization with 1,500 units of Tetanus Antitoxin, were established.

A study of the reactions following the injection of Tetanus Toxoid, and the influence of the latter upon the course of allergic disease, was done.

November 23

A Case Exhibiting the Clinical Features of Cushing's Syndrome Due to Adrenal Adenoma. By Dr. Harrison F. Flippin.

A case of adrenal cortical tumor presenting all the classical features of Cushing's syndrome is reported. The diagnosis was suggested by a retroperitoneal air injection followed by x-ray examination and confirmed by operation and autopsy. After removal of the adrenal tumor the blood pressure fell promptly to a normal level. In spite of a sustained fever of 102–104° postoperatively no sweating was noted. Despite the use of intravenous saline and cortical extract the patient went into shock and died on the eighth day after operation. Terminal serum chloride was 88 m. eq. per l. and serum sodium 127 m. eq. per l.

Postmortem examination showed no sign of infection or hemorrhage. The left adrenal was absent. The pituitary on serial microscopic section revealed no adenoma but the basophil cells showed the hyaline change of Crooks. The cause of death cannot be clearly stated. Adrenal insufficiency is possible. A practical

warning may be taken from this report: both adrenals should be inspected before one is removed.

THE CLINICAL VALUE OF THE DETERMINATION OF SIZE AND HEMOGLOBIN SATURATION OF THE RED BLOOD CELLS. By Dr. William P. Belk.

Determinations of red cell size and hemoglobin saturation as expressed by the corpuscular constants, or better by the indices, furnish evidence concerning the type of an anemia, its possible etiology, suggest the most appropriate type of specific therapy, and serve as a guide to the final effectiveness of therapy.

A deficiency of Castle's essential substance, whether associated with true addisonian anemia, or secondary to some chronic disorder of the digestive tract, is always manifest by an increase in the size of the average red blood cell. An iron deficiency results in a lowering of the hemoglobin saturation and eventually in a decrease in cell size. Anemias incidental to infections are characterized by normal indices, especially a normal saturation index. When anemias are classified on this bases inferences concerning etiology and specific therapy are obvious. The occurence of a high volume index with a low saturation index furnishes the only definite evidence of combined anemia, that is one with both liver and iron deficiency.

In recovery from macrocytic anemia, and probably from microcytic anemia also, the abnormality of cell size is the last to disappear. For this reason the volume index is a helpful guide to the final adequacy of therapy.

It is felt that the determination of volume and saturation indexes are helpful supplements to more routine methods in anemias the cause of which is not at once apparent: in anemias which do not respond to therapy as expected; in anemias incidental to chronic disorders of the digestive tract: and as an index of the final effectiveness of antianemic therapy.

INDICATIONS FOR THE OPERATIONS OF CARDIOLYSIS, PERICARDIOTOMY AND PERICARDIECTOMY. By Dr. Moses Behrend and Dr. Russell S. Boles.

The indications for cardiolysis are to give to the heart more room for expansion. Cardiolysis is usually performed for cardiac

hypertrophy and for acute and chronic inflammatory conditions resulting in adhesive pericarditis. The operation of pericardiotomy is self explanatory. It is performed for the purpose of relieving the pericardial sac of collections which are usually purulent. Pericardiectomy is an operation in which the heart is stripped of its pericardium. Cardiolysis always precedes this step in the operation.

The profession must be reminded of the fact that the patients requiring these measures are sent to the surgeon too late for the remedial operation. A report of five cases is appended; three cases illustrating adhesive pericarditis, one case of purulent pericarditis, and one of tuberculous pericarditis with effusion. All of the patients died following operation. All except one were relieved of pain and discomfort due to their disease.

An historical sketch of the operations performed for these conditions is appended.

Bacterial Type Transformation. By Dr. Hobart A. Reimann.

Bacterial or virus type transformation has been discussed for years in regard to the relationship of smallpox to vaccinia and of "street" to "fixed" virus of rabies. It has been considered also among meningococci, gonococci, typhoid and diphtheria bacilli. More recently the relationship between "murine" and "epidemic" typhus and the variations in the behavior of rabbit papilloma virus strongly suggested type transformation of the respective viruses. Positive evidence of type transformation among pneumococci was first demonstrated by Griffith and confirmed by myself and others. The theoretical importance of type transformation in regard to infectious disease and to epidemiology is obvious.

In 1934 I obtained a strain of *M. tetragenus* from the blood of a patient with meningitis and arthritis. The organism produced white colonies. Upon aging, yellow colonies developed as daughter colonies on the white ones, and a third or translucent form appeared. Subsequently pink, pink-yellow and brown colonies appeared under various circumstances, each of which bred true on further transfer and were immunologically distinct types. Spontaneous transformation from one type into another was repeatedly observed. In addition to the type transformation

noted, each type was induced to dissociate into its various component M, S and R culture-phases, until 15 variants of the original white form were isolated and studied.

Type transformation and culture-phase variation could not be forced in any desired direction experimentally but appeared to be a chance phenomenon. The various forms exhibited constant differential cultural preferences for different ranges of temperature and hydrogen-ion concentration of media, and different degrees of resistance to various bactericidal influences. The white form as dervied from the patient grew best at temperature, CO_2 tension and pH ranges similar to those found *in vivo*. It appeared that type transformation and culture-phase variation were phenomena which permitted the existence of a bacterium in a wider range of environmental conditions than would be possible with a single fixed form.

December 28

The Use of Peritoneal Lavage in the Treatment of Acute Renal Failure. By Dr. Jonathan E. Rhoads.

Peritoneal lavage as a therapeutic procedure in uremia was suggested by Gantner in 1923. It is based on the fact that urea and certain other diffusible substances may be removed from the blood stream by dialysis and on the premise that the peritoneum may be used as the dialyzing membrane.

It was recently employed in the case of a patient with uremia admitted to the hospital of the University of Pennsylvania on the service of Dr. I. S. Ravdin. Immediately before the procedure the patient's blood urea nitrogen was 184 milligrams per cent, the chlorides 101.1 milliequivalents per liter, the serum carbon dioxide 31 volume per cent, the blood sugar 244 milligrams per cent, and the hemoglobin 40 per cent (Sahli).

Under local anesthesia a 3 millimeter cannula was pushed into the peritoneal cavity in the midline two inches below the umbilicus. Nine liters of fluid were introduced in six installments. This fluid contained 14.5 grams of sodium chloride per liter, 0.4 grams of potassium chloride per liter, .2 grams of calcium chloride per liter and 2.4 cubic centimeters of lactic acid as sodium lactate per liter. The total chlorides were 256 milliequivalents per liter.

Six and one quarter liters of fluid were recovered which contained 75 milligrams per cent of urea nitrogen, 164 milliequivalents per liter of chloride and 90 milligrams per cent of glucose.

The procedure lasted two and one-half hours. At the end of this period the patient's blood urea nitrogen was 155 milligrams per cent, blood sugar 270 milligrams per cent, serum chlorides 116.5 milliequivalents per liter, serum carbon dioxide 29 volumes per cent, and hemoglobin 42 per cent. The patient seemed to improve for a few hours but subsequently died.

Calculation indicates that two thirds of the urea removed came from body fluids other than the circulating blood. For this reason large amounts of lavage fluid appear to be indicated. It is believed that peritoneal lavage is worthy of further clinical trial in cases of acute renal failure in which the ultimate prognosis is fair if the patient can be tided over the immediate crisis.

Constriction of the Pulmonary Artery by Adhesive Pericarditis. By Dr. Benjamin A. Gouley.

Constricting pericarditis involving the pulmonary artery is another type of constriction of the great vascular trunks by pericarditis. Pericardial adhesion may compress the pulmonary artery to the degree to give physical signs striking enough to warrant a clinical diagnosis. This report is based on necropsy examination of five patients who showed in life many of the signs of constriction of the pulmonary artery. Physical signs are: (1) systolic murmur in the pulmonary artery; (2) accentuated P–2 and diastolic shock; (3) A wave-like systolic pulsation along the upper left border of the sternum followed immediately by retraction; (4) systolic thrill in the same area; (5) increased width of the area of cardiac dullness in the 2d and 3d left interspaces. All these patients had rheumatic heart disease. It is probable that some cases of pericarditis of tuberculous origin will be encountered. A constricting pericardial adhesion may be a most important factor of a generalized pericarditis or may be localized entirely to the region of the pulmonary conus and artery.

Physical signs represent three pathological processes: (1) pulmonary arterial hypertension; (2) adhesive pericarditis; (3) constriction of the pulmonary artery.

Differential diagnosis includes consideration of uncomplicated mitral stenosis and any condition that causes pulmonary hypertension; also congenital heart disease, especially those types associated with pulmonary stenosis. Aneurism of the left sinus of Valsalva and tuberculous mediastinal pericarditis also must be differentiated. While most of these people die in early adult life because of the severe infection and reinfection with resulting myocarditis it is probable that those who may survive will probably suffer from the effects of pulmonary constriction per se.

Macrocytic Anemia in Pregnant Women with Vitamin B Deficiecy. By Dr. Katharine O'Shea Elsom.

The efficacy of brewer's yeast and of liver extract in treatment of the macrocytic anemias has led to the belief that vitamin B may be the extrinsic substance necessary to prevent the development of such a blood picture. The spontaneous occurrence during pregnancy of a syndrome resembling pernicious anemia suggested that a temporary deficiency of the extrinsic substance may develop during that epoch and further suggested that a study of the factors concerned in the development of that anemia might shed light on the general problem. In the present investigation 8 pregnant women who habitually consumed poor diets were studied from the 4th month of pregnancy to term. The vitamin B content of the diets consumed by these women was theoretically adequate at the onset of pregnancy but failed to meet the increased demands for this vitamin late in pregnancy. Every other dietary essential was present in excess of requirements. At the time that the diet became theoretically inadequate in vitamin B clinical evidence of deficiency in that vitamin appeared consisting chiefly of loss of tongue papillae, impairment of vibratory sense and paresthesias in the lower extremities, easy fatigue, tachycardia, edema, gastrointestinal disturbances, decrease in the total number of red blood cells, increase in mean cell size and in mean cell hemoglobin, increase in reticulocytes and the appearance in the stained blood spread of macrocytes, polychromatic cells and poikilocytes. Brewer's yeast or liver extract was then administered to all patients. Following this therapy clinical evidence of vitamin B deficiency disappeared at the time that blood values returned toward normal.

A Contribution to the Study of Mental Disease: The Laurence-Biedl Syndrome in a Brother and Sister Admitted as Mental Defectives. By Dr. Thos. K. Rathmell and Dr. M. A. Burns.

The psychobiological study of a brother and sister admitted to a mental hospital revealed that the diagnosis of mental deficiency, under which they were admitted, was but one attribute of the Laurence-Biedl syndrome. Further study of these patients showed that their parents were first cousins and Russian Jews; detailed family history revealed that four members of the eleven siblings may have shown the same set of symptoms. Obesity, retinitis pigmentosa, phalangeal synostosis, Telford-Smith phalanges and budding of the phalanges as well as hypoplasia or inadequacy of the genitalia with hair distribution of the opposite sex were also present.

The patients were studied by a combination of radiological, hematological, serological and physiological methods. Phosphatase levels were determined in the Laurence-Biedl syndrome for the first time.

Etiological concepts of this syndrome, according to Biedl, Raab, Ornsteen and Jenkins and Poncher, were reviewed. No new theory of causation was evolved. Attention was directed to the fact that the embryological period of development of the medial coat of the cerebral vessels coincides with the formative period of the phalanges and retina. Congenital defects in the coats of the vessels supplying the hypothalamus have been found in two cases of this syndrome studied at the Philadelphia General Hospital.

Every patient admitted to a mental hospital should be studied thoroughly from the psychobiological approach.

PROCEEDINGS OF THE SECTION ON MEDICAL HISTORY, OCTOBER TO DECEMBER, 1936

October 12

Annual Students' Meeting

Symposium on "Early Medicine in Philadelphia, Its Teaching and Practice."

Weir Mitchell and Philadelphia Neurology. By Dr. Charles W. Burr.

As a youth, Weir Mitchell exhibited both a taste and an aptitude for literature, qualities which developed from the cultural background of his family and were fostered by the conservative spirit of the time in which he lived. His father was a physician, otherwise Mitchell would certainly have become a writer. As it was, he attended the Jefferson Medical College from which he graduated in 1851. His rise to fame began with the publication of his studies on gun shot wounds of the central nervous system. He achieved international recognition for his still famous book on the rest cure. Weir Mitchell's clinical work was characterized by sympathy for his patients and intellectual honesty. He always considered himself first a physician and then a neurologist, an attitude which the medical student of this age of specialization would do well to imitate.

The Early Teaching of Anatomy. By Dr. Edward B. Krumbhaar.

In the earliest period of Philadelphia medicine, the study of anatomy received little attention. The first systematic teaching was begun in 1730 by Cadwalader, upon his return from Scotland. Although a series of lectures was advertised by Dr. Woods of New York as early as 1755, the first anatomical lectures known to have been delivered were presented some years later by William Hunter of Newport, R. I. These were interrupted by the Revolutionary War. Many Philadelphia physicians, including Shippen, received their training in anatomy from Fothergill in England,

but the establishment of a medical school at the University of Pennsylvania led to the rapid development of medical teaching in America, and to the founding of similar institutions in other parts of the country.

Pioneers in Philadelphia Medicine. By Dr. W. Egbert Robertson.

Among the early colonists of America, the majority of medical men were barber surgeons. With the establishment of medical schools at the University of Pennsylvania and at Harvard University, however, the standards of training were made extremely difficult. The curriculum at these institutions included advanced work in Latin, mathematics, and philosophy. An arduous apprenticeship was also required. Illustrative of early Philadelphia medicine is the career of Benjamin Rush who, after a period of study in Europe, was appointed professor of chemistry at the University of Pennsylvania at the age of 24. He taught more than three thousand students. Like other physicians of his day, Rush was a public spirited citizen and was one of the signers of the Declaration of Independence.

Early Ophthalmology in Philadelphia. By Dr. Burton Chance.

The treatment of ocular disorders in America was first practiced by quacks, who were regarded with the utmost fear. The real pioneers of modern ophthalmology in this country were the surgeons, Physick and Gibson. In the beginning of the 19th century, Physick operated for the relief of cataract while Gibson devised the surgical correction of divergent squint. The regular teaching of ophthalmology was begun by Frick. In 1834 the Wills Eye Hospital was opened, but at that time diagnosis and treatment were greatly handicapped by the fact that the ophthalmoscope had not yet been discovered. Philadelphia has produced many distinguished contributors to American ophthalmology, outstanding among whom are Dorsey, McClelland, Parrish, Hays and Fox.

Distinguished Surgeons at the Jefferson Medical College. By Dr. John H. Gibbon.

In the history of the Jefferson Medical College, the period of 75 years from Pancoast to DaCosta was characterized by brilliant

teachers. McClelland, one of the founders of the college, was a splendid lecturer, but because of temperamental incompatibility with his associates, he was ultimately dropped from the faculty. Pancoast, the greatest surgeon of his day, then occupied the chair of surgery for a year, but relinquished it to Mütter in order to resume the professorship of anatomy. Mütter remained professor of surgery for fifteen years. He was the youngest of that illustrious and scholarly group which included Meigs, Bache, Pancoast and Mitchell. Less brilliant than these men but a tireless worker, was Gross, who received the highest honors of all his colleagues for his contributions to surgical literature. It was the great friendship between Gross and Agnew which finally overcame the acrimonious feeling so long existent between Jefferson and the University of Pennsylvania.

Early Student Notebooks. By Dr. William Pepper.

The notebooks of the early American students of medicine are remarkable for their brevity. The teachers' words appear to have been quoted verbatim yet only a few minutes are required to read lectures which must have taken an hour to deliver. The first book described belonged to Archer, was written in 1766–67, and consisted of notes on lectures by Shippen, Morgan, and Bond at the College of Philadelphia. Two later books, recording lectures by Kuhn in 1785 and by Rush in 1798, are essentially similar. Rush made frequent reference to venesection, a procedure for which he appears to have been rather overenthusiastic, for he was fined £ 1,000 as a penalty for exsanguinating a moribund patient in order to hasten his death. Lengthy passages of considerable interest but of dubious scientific value are devoted to "the diseases of passions" and "the treatment of excessive love."

November 9

Philip Syng Physick's Last Major Operation. By Dr. Alexander Randall.

Philip Syng Physick was sixty-three and had already retired from active practice when Chief Justice Marshall consulted him for the relief of bladder stone. Marshall was then seventy-six, but preferred the pain of operation and probable death to the continuance of his suffering. On the morning of the operation

the patient ate a hearty breakfast. He was then given a suppository of opium and held securely on a table. The usual perineal incision was made and over one thousand stones were removed. To such harrowing treatment, the courageous Chief Justice uttered scarcely a murmur. He recovered completely and at the age of eighty died of a liver disease. Post mortem examination showed that the bladder had healed and that there was no further evidence of stone.

The Rise of British Surgery in the Eighteenth Century. By Dr. Fenwick Beekman (by invitation).

Surgery in the 17th century was considered a craft and was controlled by the regulations of the barber surgeons. In the 18th century, surgeons for the first time became independent of the barbers. Their training was obtained in the course of a seven years apprenticeship, upon the completion of which most of them joined the medical corps of the army or navy. Surgery of the early 18th century was based entirely upon personal clinical experience and it was not until after the time of Shaw and Pott that it came to have any logical basis in physiology. In this transition it was largely influenced by that extraordinary and talented man, John Hunter.

December 14

Memoirs of Mauriceau. By Dr. Edward A. Schumann.

François Mauriceau was born in 1637, during a period which was rich in the development of obstetrics. At the age of twenty-three, he was appointed accoucheur to the Hôtel-Dieu. Although he later became the most scientific obstetrician of his day, Mauriceau died a disappointed man because he never gained the most important distinction of his day, that of attending personages of the blood royal. This honor fell to Clément, his detested rival. Mauriceau published two excellent textbooks. He was a logical thinker and a true scientist. This, together with his uncompromising disposition, caused his entire career to be marked by bitter polemics with his less progressive colleagues.

John and Robin Adair. By Dr. Archibald Malloch (by invitation).

Benjamin West's great painting, "The Death of Wolfe," includes the portrait of a surgeon generally believed to be Robert

Adair, but which is, in reality, that of John Adair. John Adair participated in Braddock's expedition, the battle of Louisburg, and the capture of Montreal and Quebec. His career took him also to Martinique. In 1762 he became the Director of Hospitals in New York. Robert Adair, better known as Robin Adair, was born in Ireland about 1710. In his youth he joined the barber surgeons and came to London where he married Lady Caroline Kepple. Through the influence of his wife, he was appointed Inspector General of the Army and Sergeant Surgeon to the King. An able and charming man, Robert Adair died at the age of eighty after gaining the topmost rank in his profession, that of Surgeon General to His Majesty's Forces.

PROCEEDINGS OF THE SECTION ON PUBLIC HEALTH, PREVENTIVE AND INDUSTRIAL MEDICINE, OCTOBER TO DECEMBER, 1936

October 5

The Incidence of Tuberculosis Infection in American Colleges. By Dr. Esmond R. Long.

Reliable results for nation-wide surveys, in the hands of many men, on incidence of tuberculous infection require the use of a standardized tuberculin administered with uniform technic. During the academic years 1934–36 statistics were gathered from the American colleges using the standardized tuberculin adopted by the Committee on Medical Research of the National Tuberculosis Association, viz. Purified Protein Derivative tuberculin. The results for 18,000 entering students in twenty colleges reporting in the year 1935–36 are here given. They represent accurately completed tuberculin tests, in which a strong standard dose of Purified Protein Derivative was administered to all negative reactors to an initial small standard dose. A geographical variation in the incidence of tuberculous infection was found, with relatively high rates (40–60 per cent) in the east and far west and low rates (20–30 per cent) in the central states. Since the majority of the students in the colleges reporting were residents of the general region of their college, the figures are believed to reflect the incidence of tuberculous infection in the populations of those regions. Excessive rates were found in regions noted as resorts for tuberculous patients. In colleges reporting tests on large groups of young men and young women of approximately the same average age the rate of positive tuberculin reaction was higher in men than women.

Certain Practical Considerations in the Use of Purified Protein Derivative Tuberculin. By Dr. Florence B. Seibert.

Purified Protein Derivative Tuberculin, when used in the specified manner, meets the requirements of a standard tuberculin. Since its potency is of such a high order (0.00002 mgm. or

less is sufficient to cause a marked reaction in a tuberculous individual) it is necessary to give extra consideration to the possibility of contamination of glassware used in making dilutions or in injecting. Tuberculin has great "tenacity" for glassware and cannot be removed with certainty by washing with water or alkali or by immersing in hot cleaning solution for ten minutes. Many a positive Schick test, pollen or other allergic reaction may really be due to contamination of the syringe with tuberculin used at some previous time. Therefore, separate syringes should be reserved for different substances and they should never be mixed.

Freshly diluted Purified Protein Derivative is constant in its potency. On keeping the diluted solutions for two days in the incubator no loss in potency could be demonstrated. One week after dilution the second dose strength solution showed some loss in potency. Four months after the solutions had been diluted and kept in the ice box, there was a material decrease in potency and at the same time small, atypical non-specific reactions occurred, which were probably due to a bacteria-free sediment found in the solutions. The progressive loss in potency may have been caused by the few bacteria which were demonstrated to be present in the solutions and which were not killed by the 0.25 per cent phenol in the diluent. Since the number of colonies found did not parallel the length of time the solutions had been kept, it is probable that this strength phenol inhibited reproduction of the bacteria but did not necessarily kill those present. Therefore, 0.5 per cent phenol would be more efficient in preserving the solutions and it was found to give rise to no non-specific skin reactions.

The Role of Ambulatory Collapse Therapy in the Control of Tuberculosis. By Dr. H. W. Hetherington.

In Philadelphia and in many other communities facilities for the institutional treatment of tuberculous patients are inadequate. For this reason many tuberculous patients must undergo a large part or all of their treatment without the benefit of institutional care. The purpose of the ambulatory collapse therapy clinic is to care for tuberculous patients while they remain in their own homes. Its objectives are adequate treatment for the patient and prevention of contagion.

The principles of treatment are the same whether the patient is in an institution or in his own home. But in the sanatorium general rest treatment, that is rest in bed, is the chief treatment, with local rest, by pneumothorax or allied procedures, playing a secondary role; while in the ambulatory collapse therapy clinic we place our reliance mainly upon the local treatment, reenforcing it with general rest to whatever extent we are able to get the patient to take it. It is obvious that treatment in the dispensary is restricted to patients who are suitable for pneumothorax treatment in whom a satisfactory collapse can be obtained.

In almost all instances patients who are considered suitable for treatment in the collapse therapy clinic lose their positive sputum within a short period of time due to closure of cavities. The precautions that the patient should take to avoid infecting others are stressed by the clinic physician and his advice is reiterated by a specially trained staff of public health nurses who visit the patient and his family at home. All members of the household are urged to attend the dispensary for examination at appropriate intervals.

Treatment in the dispensary, by pneumothorax and allied procedures, of a large number of patients who exhibit unilateral or predominantly unilateral disease makes available sanatorium beds for the numerous sputum positive cases of tuberculosis who must rely upon general rest treatment alone. Sanatorium patients should be recruited from the latter group when facilities are limited.

Ambulatory Pneumothorax in Tuberculosis Control. By Dr. J. W. Culter.

The ambulatory pneumothorax clinic at the Henry Phipps Institute was organized in May, 1931, to care for those tuberculous patients who were considered suitable for pneumothorax treatment but who failed to get early admission to a sanatorium because of lack of bed facilities. This was particularly important where the sputum contained tubercle bacilli.

There were also a considerable number of patients who refused to go to a sanatorium or hospital for prolonged stay. Many of these patients accepted pneumothorax treatment in the clinic.

In addition there were a group of patients who had received pneumothorax therapy in a sanatorium or hospital and after a

sojourn there left the institution either with or without consent to continue their treatment in the pneumothorax clinic.

In all 225 patients have been under active treatment in the collapse therapy clinic during the past five years. This report deals with 85 patients who had unilateral or predominently unilateral tuberculosis.

Twenty-five of these patients had an average initial period of hospitalization of 7.9 months in an institution where pneumothorax treatment was instituted. Sixty patients were started in the clinic or were hospitalized for only a few days to establish a collapse. As far as we could determine, the sixty without the extensive period of hospitalization did just as well as the 25 with a prolonged initial period of hospitalization. They had no more relapses or effusions. The mortality rate in each group to date has been four per cent.

Based on this experience we believe that when the toxemia is not severe and the disease not too far advanced, if it is confined to one lung and if a satisfactory collapse can be established, conditions found in about 4 per cent of the tuberculous, such patients do not necessarily need a prolonged period of hospitalization but can be treated in a well run collapse therapy clinic. The general adoption of such a plan should have far reaching public health and economic consequences.

December 7

Constitutional Factors in Cardiovascular-Renal Diseases.

By Dr. Raymond Pearl.

Following a discussion of the relative frequency of cardiovascular-renal diseases as causes of death, three pedigrees were presented, showing the following relations:

	Total number deaths to time of record	Number due to cardiovascular-renal diseases	Percentage of deaths due to cardiovascular-renal diseases
Family A 54	19	10	52.6
Family B 53	12	7	58.3
Family A 69	4	3	75.0
All three families together	35	20	57.1

In each of these three pedigrees (and therefore necessarily in all of them together) the percentage of all deaths due to the cardiovascular-renal group of diseases is considerably higher than the 40 to 41 per cent of deaths of whites in the general population from the same set of causes.

In generation I of the three pedigrees shown, taken together, the matings of seven individuals who died of one form or another of cardiovascular-renal disease produced a total of 24 children (Gen. II) and 19 grandchildren (Gen. III) not counting stillbirths or miscarriages, or a total progeny including both generations II and III of 43. Of these, 11 children and 6 grandchildren, or a total of 17, either died of, or were at the time of record afflicted with, some form of cardiovascular-renal disease.

For comparison with these figures there were taken at random from our records the matings of 12 pairs of grandparents, no one of whom ever suffered from any form of cardiovascular-renal disease, but who were in age at death and all environmental circumstances and modes of life fairly comparable to those just discussed. These 12 pairs of grandparents produced 84 children and 299 grandchildren, or a total progeny for the two generations of 383 individuals. Of these 383 children and grandchildren only 18 in total (8 children and 10 grandchildren) had either died of or even shown, up to the time of record, any sign or symptom of any cardiovascular-renal disease.

So then we have a total two-generation progeny proportionate incidence of cardiovascular-renal disease more than eight times as great in families where there is presumptive evidence that heredity is a factor in this incidence, as in families where no such presumptive evidence exists. This difference in proportionate incidence is striking, and can scarcely be regarded as accidental, particularly as it is more than four times its probable error, even though the numbers involved are small.

Data were then presented from the earlier studies of Pearl and Ciocco relative to the somatological differences between persons with and those without ascertainable cardiovascular lesions or symptoms.

A detailed analysis was then presented of the family histories of some 285 patients with some form of cardiovascular disease, and 362 patients without any such disease, the latter series serving for comparison with the former. The results were summarized as follows:

A group of patients with some form of cardiovascular-renal disease, when compared with a group of patients without any such disease, and compared not only in respect of themselves but in respect of the immediate families in both cases (parents, siblings, and children), *exhibit as a group a definitely lower level of vitality.* This lower vitality level expresses itself in various ways —by definitely poorer family general health up to the time of record, by greater mortality in proportion to the number exposed in the kinship class, and by fewer total life years, experienced and expected. The following table sums up the evidence on this latter point. In computing this table Glover's life tables were used for the expectancies.

TOTAL LIFE YEARS EXPERIENCED AND EXPECTED PER 100 PERSONS IN EACH GROUP

Kin of patient	C-V-R (+) "With"	C-V-R (−) "Without"
Father	6,361.3	6,780.9
Mother	6,461.0	6,718.8
Siblings	4,773.0	4.936.6
Children	5,042.3	5.245.8
Total. All members of immediate family except patient	22,637.6	23,682.1

From these figures it is seen that in each of the four immediate kinship classes (fathers, mothers, sibs and children) the relatives of the patients "without" cardiovascular-renal disease have a greater total of experienced and expected life years per hundred persons in the group and class than do the relatives of the patients "with" some form of cardiovascular-renal disease. Taking all four classes of kin together this superiority of the "withouts" over the "withs" in vitality amounts to 4.6 per cent, or about 2.6 added years of life per person on the average. Actually the real difference is probably greater than this figure indicates, because in computing life expectancies of the living the same life tables were used for both groups.

Finally the influence of heredity on the incidence of cardiovascular disease was summarized as follows:

INCIDENCE OF CARDIOVASCULAR-RENAL DISEASE AMONG THE IMMEDIATE RELATIVES OF THE PATIENTS

Relatives	Percentage frequency of cardiovascular-renal disease among the specified relatives of patients themselves	
	C-V-R (+)	C-V-R (−)
Living fathers	17.1	13.8
Dead fathers	43.0	42.9
Living mothers	29.2	16.2
Dead mothers	42.4	35.3
Living sibs	11.2	4.5
Dead sibs	20.0	11.8

These figures show that for every class of immediate relatives, parents and sibs, dead and living, the percentage of those relatives with cardiovascular-renal disease is *higher* for the patients who themselves have cardiovascular-renal disease than for the patients who have no such diseases. The odds are of the order 800,000,000 to 1 against the appearance of such a concurrent frequency of cardiovascular-renal disease in patients and their immediate kin as is actually observed, if there were in fact no association between kin in respect of the incidence of these diseases. It may therefore be safely concluded that there is a definite and significant association, of a magnitude or intensity far beyond anything to be expected from the play of chance in random sampling. Furthermore since cardiovascular-renal diseases, as here dealt with, are not directly communicable diseases, it is a reasonable inference that the demonstrated association probably rests primarily upon hereditary influences affecting the constitution of the individuals under discussion.

A CLINICAL APPROACH TO THE PREVENTION OF HYPERTENSION. By Dr. Edward Weiss.

The discussion was limited to the non-renal or so-called essential hypertension. The enormous incidence of this disorder was considered and its relationship to arteriosclerosis and kidney disease. A discussion of certain facts and fallacies regarding the etiology of essential hypertension was presented by means of a

schematic outline which emphasized the interrelationship of the vegetative nervous system, the endocrine system and the psyche. Reference was made to Dr. Pearl's exact studies confirming our impressions of the importance of constitutional and hereditary factors in the etiology. References and a case record were cited to indicate the probable equal importance of vasospastic (environmental) factors. On the basis of accepted data regarding each of these approaches a discussion followed of what we can hope to accomplish now and in the future regarding prevention. Special emphasis was placed on recent studies showing the high incidence of hypertensive and kidney disease following the toxemia of pregnancy.

MEMOIR OF DR J. WILLIAM WHITE *

By ALFRED C. WOOD, M.D.

Dr. J. William White was born in Philadelphia, Pa., November 2, 1850. His father was James William White, M.D., a highly respected physician and a public spirited citizen, who later in life devoted himself entirely to business.

His first paternal ancestor in this country was Henry White, who came from England and settled in Virginia in 1649; from here the family may be traced to North Carolina, New Jersey and Pennsylvania.

Dr. White's mother was Mary Ann McClaranan, whose family were of Scotch origin and had long been among the staunch, vigorous New England settlers.

After graduating at the Philadelphia High School, the subject of this sketch entered the Medical School of the University of Pennsylvania, graduating in 1871, and he received the degree of Ph.D. at the same time.

He served as interne in the Philadelphia Hospital and later as Resident Physician in the Eastern Penitentiary. During this service he became attached to the Medical Department of his Alma Mater and soon received the appointment of Lecturer on Surgery. He subsequently became Demonstrator of Surgery and in 1887 was elected to the chair of Clinical Surgery. Upon the death of Professor Ashhurst in 1900 he was advanced to the John Rhea Barton Professorship of Surgery.

In 1910 Dr. White retired from practise and resigned his professorship in the University to devote himself to many other interests that were near to his heart. He received the appointment of Professor Emeritus from his Alma Mater.

In 1915 he organized and went to France with the University of Pennsylvania Unit of the American Ambulance Hospital of Paris.

Dr. White possessed a broad, far-seeing vision and a dynamic

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personality. Although intensely devoted to his profession and his Alma Mater, he took an interest in many other activities and public welfare matters. In each, his part did not consist in lip-service but was conspicuous for helpful suggestions and material active support. Once he epoused a cause, he gave it his unremitting efforts until the object was attained.

In the affairs of the University, as Professor, Trustee and Hospital Manager, probably no member of the Faculty exerted a greater influence or added more to the facilities and physical properties of the institution. As a result of extensive study, wide reading and the possession of a keen intellect, he was outstanding as a teacher, which was recognized both by his colleagues and the students.

He was a disciple of the strenuous life and a vigorous advocate of all of the manly sports, in many of which he freely indulged. His summer holidays were spent in travel, usually in Europe.

In addition to his contributions to current medical literature, Dr. White wrote on a variety of subjects that were uppermost in public interest at that time. But whatever the subject, his papers were conspicuous examples of lucid reasoning, clear and precise statement and, it may be added, sane deductions.

Dr. White was joint editor and translator, with Simes, of "Cornil on Syphilis"; joint editor with Keen of "An American Text-Book of Surgery"; joint author with Martin of the "Text-Book on Genito-Urinary Surgery and Venereal Diseases"; and contributed the Practical Considerations to "Piersol's Anatomy."

Dr. White took an active part in the passage of the Medical Examiners Act and the establishment of the Four-Year Medical course.

He served on many boards and committees; he was a member of the Fairmount Park Commission; he formed, and was the first president of the Rittenhouse Square Association, which undertook the beautifying of this square.

He was a tower of strength to his many friends, who came to him as the court of last resort with their troubles and who never left him without sound counsel and assistance.

In 1906 the University of Aberdeen at its 400th Anniversary celebration conferred the Honorary Degree of LL.D. on Dr. White, and he had the additional honor of being selected to make the address of congratulation on behalf of all American Universities.

Dr. White married Letitia, the daughter of Benjamin H Brown, of Philadelphia.

A portrait of Dr. White by John Singer Sargent hangs in the Medical School of the University of Pennsylvania.

Dr. White died on April 24, 1916, in his 66th year. I may add the estimate of a prominent co-worker with Dr. White in the University of Pennsylvania, a life-long friend, as follows: "Since its great founder, the many-sided Franklin, the University of Pennsylvania has not known his superior in versatility and all-around capacity, in energy and tenacity of purpose; an inspiring example to the youth of America, to whom through many years he gave without stint of the best that was in him."

An outstanding surgeon, author, traveler, patron of athletics and sports, distinguished citizen and a true friend—these are some of the qualities so prominently displayed by the subject of this memoir.

MEMOIR OF DR. WILLIAM JOHNSON TAYLOR*

By FRANCIS R. PACKARD, M.D.

It is interesting that one who throughout his life was so prominent in many of Philadelphia's oldest and most conservative institutions was not a native of that city. William Johnson Taylor was born in Worcester County, Maryland, on October 13, 1861. His mother was Mary Eliza Bearden Taylor, the wife of William Johnson Taylor, who was a major in the United States Army in the Civil War. The boyhood of Dr. Taylor was passed chiefly in Knoxville, Tennessee, and at Winchester, the estate of his paternal grandfather on the Eastern Shore in Maryland.

Dr. Taylor graduated from the Medical Department of the University of Pennsylvania in 1882, and subsequently was a resident physician in the Pennsylvania Hospital. Upon leaving that institution he entered on private practice in Philadelphia, devoting himself especially to surgery. A few years later his ability in this direction attracted the attention of the late Dr. W. W. Keen, then one of the leading surgeons in Philadelphia, and he was chosen by Dr. Keen to assist him in his private practice and in his work at the Orthopedic Hospital. At that time Dr. S. Weir Mitchell and Dr. Keen were conducting an unsurpassed service in neurological surgery. Young Dr. Taylor threw himself heart and soul into the work, and won for himself the heartiest recognition from both Mitchell and Keen, leading as years went on to the closest friendship between the two older men and their much younger associate. Later Dr. Taylor was elected Attending Surgeon to the Orthopedic Hospital and Infirmary for Nervous Diseases, and in 1935 the Managers and Staff of the institution recognized the completion of his half century of faithful service to it by a ceremony in his honor, accompanied by the presentation of a watch.

Dr. Taylor held many other hospital positions, at one time or another, having been surgeon to St. Mary's and St. Agnes' Hos-

* Read May 11, 1936.

pitals, and consulting surgeon to the Women's Hospital, St. Agnes' Hospital and the Abington Memorial Hospital. For several years he was Professor of Orthopedic Surgery in the Philadelphia Polyclinic. In 1890 he became a Fellow of the Philadelphia Academy of Surgery, of which he was later Secretary and in 1908–09 President. Dr. Taylor was a member of many medical societies, besides the College of Physicians, and was also a Fellow of the American Surgical Association and of the Société Internationale de Chirurgie. He was likewise a member of the Rittenhouse Club and of the British Officers Club, of Philadelphia.

It is unfortunate that in a memoir of this character it is necessary to give such an enumeration as the above, because it limits the space which one would like to devote to the really important features of its subject's life.

Aside from his practice and hospital work Dr. Taylor had two great interests, the Library Company of Philadelphia and the College of Physicians of Philadelphia.

Dr. Taylor was elected a Director of the Library Company in 1909 and continued to serve on the Board until 1935, when he retired because of the expiration of the term for which he was eligible. During the last two years of his service on the Board he was President of the Library Company. Speaking as one of the Board I can state without exaggeration that the loss of his services to the Library Company was irreparable. He not only was a most regular attendant at the meetings of the Board, but he served on the most important committees, and he used to spend hours studying the condition not only of the Library at Juniper and Locust Streets, but also that of the Ridgeway Branch, at Broad and Christian Streets. He loved the Library and knew every detail of its work, and devoted a tremendous amount of time and energy to it. The monthly meetings of the Board of Directors were always enlivened by his gentle wit and delightful gift for conversation. The same might be said of his connection with the College of Physicians. Dr. Taylor was elected a Fellow of this College in 1889. Within a very few years he was elected to the Council of the College. For many years he was a member of the Library Committee and for some years its chairman. From 1923 until his death he was a member of the Committee on Finance and he also served as its chairman for a long period. In 1919 he was elected to the presidency, in which capacity he

served for three years. Dr. Taylor was an excellent presiding officer, and his thorough familiarity with every detail of the work of the College enabled him to deal with the post-war demoralization, which the College experienced along with every other organization, with remarkable success. Subsequently he was one of the Censors. One of his most important services to this College was rendered as Secretary of the Building Committee, which was responsible for the erection of our present hall. In this capacity most of the details of that arduous task fell upon his shoulders, and to him more than to anyone else do we owe the successful completion and furnishing of this beautiful building.

When on November 11, 1909, Dr. Taylor turned over the keys of the completed College to Dr. de Schweinitz, then the Vice-President of the College, the latter in accepting them said: "The members of this (Building) Committee, and you in particular, their chief executive officer, have striven so earnestly, so effectively, so unselfishly, that they have placed all those who hereafter shall share in the benefits of these new surroundings deeply in their debt."

In 1917 Dr. Taylor's brother-in-law, Mr. Clement B. Newbold, established with a munificent donation the Mary Scott Newbold Lecture Fund in memory of his wife. There is no doubt that it was largely owing to Dr. Taylor that the College of Physicians was the recipient of this splendid gift.

When our country entered the World War Dr. Taylor, though in his fifty-sixth year, went overseas with the Pennsylvania Hospital Unit, Base Hospital No. 10, U.S.A. Entering upon active service May 15, 1917, as First Lieutenant, he sailed with the Unit from New York on May 19. On September 10, 1917, he received his commission as Captain, and on January 9, 1918, as Major. On November 11, 1918, he was commissioned Lieutenant Colonel. On December 31, 1918, Colonel Taylor was detached from the Unit and ordered home. He received his discharge from the service February 14, 1919. During this long term of service overseas Colonel Taylor was Surgeon, and during a large part of the time Senior Surgeon of the Unit. We cannot go into the details of the immense service which he rendered throughout this time. The Pennsylvania Hospital Unit served continuously during the War with the British. Upon its arrival in France it was stationed at Le Tréport, where it was given charge of British General Hospital

No. 16, a hut and tent hospital with a bed capacity for 2,232 patients. The surgical service was always very onerous, and to Colonel Taylor fell a large part of it. Day or night huge convoys would arrive with great numbers of cases requiring urgent operation. He would be in the operating room for hours at a time, and yet never failed to make his regular rounds and see to the dressings required by the patients in his wards. But it was not only his surgical skill and energetic labors that won Colonel Taylor the love and esteem of every officer, nurse and enlisted man in the Unit. His unfailing courtesy and kindness, his self effacement and helpfulness to others gave him a place in the hearts of the men and women who served with him, the memory of which will never be effaced. With all these amiable and lovable traits Colonel Taylor was a good disciplinarian. He was alert to discern any neglect or dereliction in duty, and he was equally quick to correct the fault. This was soon learned by his subordinates, and there was no officer in the Unit who was more respected and whose orders or instructions were better carried out. Colonel Taylor's many friends at home used frequently to send him packages of delicacies, cigars, cigarettes, etc., and it was delightful to see the pleasure with which he hastened to share them with others.

Dr. Taylor made but few contributions to medical literature, but the articles which he wrote were all characteristically concise, practical and to the point. He wrote clear, terse, correct English which held the reader's attention closely to the matter.

Dr. Taylor was married on April 29, 1891, to Miss Emily Buckley Newbold, of Philadelphia, who survives him. They had four children who are all living, C. Newbold Taylor, Mrs. Charles Willing, William J. Taylor, Jr., and Francis Henry Taylor.

Dr. Taylor died on January 22, 1936. The funeral services, which were held in St. Marks Church, were a demonstration of the widespread affection in which he was held. The great church was crowded with his professional colleagues, nurses who had worked for him, many of the enlisted men who had served under him overseas, former patients and a host of loving friends.

> "His life was gentle, and the elements
> So mix'd in him that Nature might stand up
> And say to all the world, 'This was a man!'."

MEMOIR OF DR. McCLUNEY RADCLIFFE *

By JOHN T. CARPENTER, M.D.

On February 28, 1936, in his eighty-first year but still actively engaged in the practice of ophthalmology, Dr. McCluney Radcliffe died as a result of severe injuries received in a fall on the icy pavement. The son of McCluney and Sarah (Cunningham) Radcliffe, he was born near Lewistown, Mifflin County, Pennsylvania, June 6, 1854. Reared on his father's farm in Little Valley, he received his early education in the local public schools, prepared for college in the Kishacoquillas Seminary, and entered Lafayette College January 1874, graduating with the degree of A.B., June 1877. His degree of A.M. was received during his medical course at the University of Pennsylvania, in 1880. His college days at Lafayette completed, he returned to the farm and spent two years of strenuous life in the open, to which in large part he owed his splendid physique and vigorous health which at seventy-five, in spite of arduous work, gave him the appearance of one still in his prime.

Matriculating in the Medical School of the University of Pennsylvania in the autumn of 1879, he received his degree of M.D. on March 15, 1882, and served during 1882 and 1883 as intern at the Orthopaedic and Germantown Hospitals. He was Assistant Surgeon at the Orthopaedic Hospital from 1883 to 1890, and Clinical Assistant in the Eye and Ear Department of the Pennsylvania Hospital from 1883 to 1887, having early decided upon the practice of ophthalmology. He married, January 1, 1885, Mary E. Funk, and of the marriage there was born one daughter, Sarah, now the wife of Robert R. MacKay of Philadelphia. His widow, Mary E. Radcliffe, survives him.

His long service at the Wills Eye Hospital began in 1890 as Clinical Assistant to the late Dr. George C. Harlan, and from that date until his death he never severed his connection with this hos-

* Read May 11, 1936.

pital. In 1898 he was appointed Assistant Surgeon, which position he filled until his appointment as Attending Surgeon in 1901. He devoted himself to the exacting duties of this position for twenty-three years and, as Consulting Surgeon, continued his active interest in the Wills Eye Hospital until his death.

Elected Ophthalmic Surgeon of the Presbyterian Hospital in January 1914, he served until 1922, when he resigned and was made Consulting Ophthalmologist. He was also Consulting Ophthalmologist to the State Hospital for the Insane at Norristown, Pennsylvania. His membership in medical societies included: the Philadelphia County, and Pennsylvania State Medical Societies, American Medical Association, American Ophthalmological Society, American Academy of Ophthalmology and Oto-Laryngology, and the Oxford Ophthalmological Congress.

In 1908 he was elected a Fellow of the College of Physicians of Philadelphia and was continuously interested in the Section of Ophthalmology of which he was Chairman from 1922 to1923. In 1915 he was elected President of the Philadelphia Medical Club. He was a member of the Alpha Mu Pi Omega Medical Fraternity and of the Sydenham Medical Coterie.

Dr. Radcliffe did not confine his activities to medical affairs. He was a loyal alumnus of Lafayette College and, from June 1896 to October 1932, a Trustee of the College, giving his earnest cooperation to all measures concerned in its welfare and advancement. He was a member of the Phi Delta Theta Fraternity, and Historian of the General Council from 1896 to 1900. He was a thirty-third degree Mason, at one time Master of his Blue Lodge, and was influential in founding the Masonic Hospital at Elizabethtown, Pennsylvania. The honorary degree of LL.D. was conferred by Gettysburg College at the Commencement in June 1914, and the honorary degree of D.Sc. by his Alma Mater, June 1933. With his large practice and exacting hospital duties, his contributions to medical literature were not extensive, but they show careful thought and contain practical and valuable information. Among his published contributions are: Ophthalmia Neonatorum, Albumenuric Retinitis, Strabismus, Glaucoma and the Newer Operations for its Treatment, Ocular Diseases in General Practice, Thyroid Extract in Keratitis, Diseases of the Cornea, Tuberculosis of the Eye, Trachoma, Headache Due to Low Refractive Errors, Choice of Operation for Iridectomy, Recurrent Retinal Hemor-

rhages, Mikulicz's Disease, Advantages of Complete Discission by the V-shaped Method.

Dr. McCluney Radcliffe began his life work at a time when ophthalmology was advancing by giant strides. The general surgeon had relinquished the field of ophthalmic surgery. There had disappeared that deep-seated prejudice of the medical profession, commented upon by Weir Mitchell, who wrote: "I can remember when older physicians refused to recognize socially a man who devoted himself to the eye alone." Norris, Harlan, Thomson, Risley, Oliver—names to conjure with—were among the group who carried on the great ideals of the immortal Von Graefe and brought renown to Philadelphia. The revolution in the surgery of the eye produced by the discovery of local anesthesia by means of cocaine; the scientific discoveries made possible by the ever increasing number of instruments of precision; the association of ophthalmic practice with general medicine and neurology—all these factors made this period the "golden age" of ophthalmology.

Influenced by his contact and daily association with this brilliant group, McCluney Radcliffe developed the characteristics which were to dominate his work. A firm believer in the importance of refractive and muscular errors as causative factors in disturbed ocular and general health, his work was meticulously accurate, and his corrections were made with patient thoroughness, which accounted for his loyal following throughout his years of practice. He never discontinued his old-fashioned habit of devoting all the time necessary to each patient—he never adopted the modern appointment system. His operative technique and his surgical judgment were sound and conservative. Quiet and self-contained, he nevertheless revealed, to those in need of it, an unusually sympathetic helpfulness. A thorough gentleman, kind and considerate in his home life, unselfishly active in church and community affairs, he has left an enviable memory of a long and useful life of service to others.

HISTORY OF THE DIRECTORY FOR NURSES OF THE COLLEGE OF PHYSICIANS *

By FREDERICK FRALEY, M.D.

Now that the Directory for Nurses of the College of Physicians has terminated its activities after a continuous existence of fifty-four years, it has seemed desirable to the Council of the College that a brief account be recorded of this important public service conducted for the benefit of physicians, nurses and the community.

When the College held a special meeting to commemorate the Fiftieth Anniversary of the Directory, it was pointed out by a former President, Dr. William J. Taylor, who delivered the address, that when the Directory was founded in 1882 there were only two training schools for nurses in Philadelphia, one at the Woman's Hospital, and the other at the Lying-In Charity. The need for such a directory was very great, and an eloquent testimony to this effect is contained in a letter written by the late Dr. William W. Keen, who was the first Chairman of the Directory Committee. He was unable to attend the celebration, owing to infirmity at the age of ninety-five, and his death occurred only a few weeks later, but his letter of congratulation read at the meeting relates the circumstances which led to the founding of the Directory, as follows:

"It is hard for those of you that have always had the Directory to call on to realize the difficulties for doctor, patient and nurse before the existence of any such center. The more so, as those were the days before either telephones or taxicabs. Many was the time that I and every other practicing physician would have to employ a horse-hack, even in the nightime, and drive for miles in search of a nurse. Quite often our first choice would be out of town or sick, or engaged and the next on our list would live in quite another part of the city and so we might have to spend precious hours, merely in the search for a second, a third, or even a fourth choice. To-day we have only to telephone our needs to the Directory for Nurses and usually within an hour a competent nurse is at the patient's side. My relations with the Directory have always been

* Presented for publication at request of the Council, May 26, 1936.

pleasant but in the past two years I have come to know personally the boon of a ready and efficient nursing service quickly available. I am reaping a very full reward for my share in helping put this useful organization on its feet."

The Directory for Nurses of the College was closely patterned after the first public directory for nurses in the United States, that established by the Medical Library Association of Boston, November, 1879, two-and-a-half years earlier, but which went out of existence many years ago and left ours as the pioneer in the field. Like many another progressive undertaking of the College it appears to have been first suggested and later greatly assisted by the indefatigable S. Weir Mitchell, who not only gave his time and energies but together with Mrs. Mitchell actively engaged in the raising of funds to provide for the launching of this enterprise, aided by other generous and public spirited citizens. The earliest letter we possess bearing on the subject is dated December 23, 1881, and being very brief may be quoted in full:

"Dear Sir:

I send by request of Dr. Chadwick a set of the Directory blanks, also a pamphlet which reports the inception, etc., of the Directory. I enclose a newspaper account of the workings of the Bureau and a "Nurses Postal."

Truly yours,
Edwin H. Brigham

(Dr. Brigham was the Registrar of the Boston Directory.)

It would be interesting to know who the "Dear Sir" was, and also to see the enclosed documents, but a fair guess may be ventured that they reached the hands of Dr. Mitchell, for some pencilled notes in the latter's own handwriting, significantly labelled "Brigham," seem to indicate that the letter above quoted was in reply to Dr. Mitchell's request for information concerning the working of the Boston Directory.

Our next letter is from Dr. J. R. Chadwick, the Librarian of the Boston Medical Library Association, dated January 22, 1882, and was probably intended for Dr. Keen. It begins as follows:

"I can assure you that our Directory for Nurses has proved the most useful institution that we have in Boston. I would strongly urge you to establish a similar one."

He then suggests that for further information Dr. Frederick C. Shattuck, Chairman of the Committee, be consulted, which was evidently promptly done, for on January 28, Dr. Shattuck replied to a letter from Dr. Keen offering some suggestions concerning the details of organization and management of the project. He closes his letter as follows:

"Our best wishes go with you in the establishment of a Directory in Philadelphia. Will you be so good as to send us copies of all blanks, etc., which you use, as you will probably improve on ours in some ways and we should like to get the benefit of the improvement."

Shortly after this time the Secretary of the College, Dr. Richard A. Cleeman, sent a letter dated February 13, 1882, to Dr. Keen, reporting the following resolution:

"Resolved, that as some system of nurses' registration is greatly needed, the President be requested to appoint a Committee of five who shall report to the College as early as possible whether it be desirable that the College assume the duty of arranging such registration and also if desirable that they report in what manner the end may best be attained."

The Committee appointed lost no time, for on February 20 Dr. Keen drafted a report which was presented to the College on March 1, and at that meeting a Committee of three Fellows was appointed to "establish a Directory, under the auspices of the College of Physicians for the registration of trained male and female nurses, and to draw up rules and regulations for its conduct."

The Committee consisted of Drs. W. W. Keen, Albert H. Smith and S. Weir Mitchell and was to be assisted in its work of organization by four ladies, one to represent the Training School of the Woman's Hospital, one that of the Lying-in Charity, and two others not connected with either of these Schools.

The Ladies Committee consisted of Mrs. Theodore Justice, Mrs. M. Fulton, Miss Susan Stevenson, and Mrs. Weir Mitchell.

It is interesting to note that in 1910, when the writer became a member of the Directory Committee, two of these ladies, Mrs. Justice and Miss Stevenson, were still serving on the Advisory Board, and the former regularly attended the meetings.

After surmounting all the preliminary difficulties and following energetic action by the Committee in which the ladies

did their full share, and perhaps more, in the collection of subscriptions for defraying the expenses of organization, and a further sum to be retained for emergencies, the Directory opened on May 14, 1882, with Miss Emily Thomas, Assistant to the Librarian of the College, in charge as Secretary. Meetings of the Committee were held regularly to conduct the Directory in a fair and impartial manner to all concerned, and if necessary to enforce disciplinary measures. From the beginning the methods adopted proved their value and the Directory immediately assumed a place of importance in the community, which it maintained until its recent discontinuance.

Fellows of the College served on the Directory Committee, usually for long terms, for during the period of fifty-four years there were only five Chairmen and a total of fifteen Fellows who were elected to it by the College. They were:

W. W. Keen (Chairman, 1882), S. Weir Mitchell, Albert H. Smith, Wharton Sinkler (Chairman, 1895), James C. Wilson (Chairman, 1909), James V. Ingham,* Thomas G. Ashton (Chairman, 1910), Frederick Fraley (Chairman, 1925), John H. Gibbon, Arthur Newlin, John Carson, Horace H. Jenks, Henry P. Brown, John H. Arnett, Edward J. G. Beardsley.

In like manner the members of the Ladies' Advisory Committee served for long periods of time, their faithful and most efficient co-operation was invaluable, and it is proper here to record the devoted service they rendered to the College. Their names follow:

Miss Susan Stevenson, Mrs. S. Weir Mitchell, Mrs. Theodore Justice, Mrs. M. Fulton, Mrs. Moncure Robinson, Mrs. Eli Kirk Price, Mrs. C. Emory McMichael, Mrs. John Frederick Lewis, Mrs. Charles L. Borie.

The Secretaries in charge of administration of the Directory, of whom there were only four, were:

Miss Emily Thomas, 1882–1887; Mrs. M. T. Lake, 1887–1894; Miss S. H. Fullom, 1894–1904; †Miss Harriet H. Browne, 1904–1936.

* During the World War, all the members of the Committee served in the Medical Corps of the United States Army and in October, 1918, the entire Committee being absent on duty, the College adopted a resolution authorizing the appointment of a temporary Committee to manage the Directory, consisting of Dr. J. V. Ingham, Chairman, Dr. J. C. Wilson and Dr. Elliston J. Morris, who served until the regularly elected Committee were again available for duty.

† Miss Browne, the last Secretary of the Directory, became Assistant Secretary in 1898, so that her period of service covered thirty-eight years.

In 1907 Miss Anne H. Bishop was engaged as Assistant Secretary, and she also served until the discontinuance of the Directory.

The College has recorded its appreciation of their long and valued services.

In regard to the operation of the Directory as a public service, very much of interest might be recounted, but mere statistics are only dull and therefore it may be enough simply to state that more than 7500 nurses and attendants were registered by the Directory, and more than 150,000 calls were filled, many of which were in cases of great emergency. It is obvious that the Directory has been of inestimable benefit to those in need of nursing assistance throughout the long period of its history. Much might be said on this subject, but it is perhaps best stated in a circular letter dated December, 1890, authorized by the College and drafted by the Directory Committee. A copy was ordered sent to each Fellow of the College, a clear evidence of how important the Directory had become, even at that early date.

"To the Fellows of the College of Physicians of Philadelphia:

The Committee desire to call attention to the great boon that the Directory has proved to both physicians and patients. The speed and certainty with which suitable nurses can be obtained, when contrasted with the often long and fruitless search in the period prior to its establishment, is a sufficient vindication of the need of such an Institution and of its value, both to physicians and the community, especially in cases of sudden emergency as it has fully proved. Besides, this Department has aided in raising the character of the nurses by giving preference always to trained nurses and eliminating, as far as possible, pupil nurses in the actual work of nursing.

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To show that the Directory is not unmindful of the good of the nurses also, it may be stated that there was started within the last year, under the auspices of the Directory, a 'Nurses' Beneficial Society.'* The College is exempt from any pecuniary or other responsibility for this Society, but the membership in it is limited to those nurses who are registered at the Directory.

W. W. Keen,
Wharton Sinkler,
James C. Wilson."

In recent years the establishment of Directories by hospitals and other agencies rendered the Directory of the College less vital to the needs of the community, and following advice of the legal

* This Beneficial Society continued to exist throughout the whole history of the Directory.

counsel of the College it was voted to discontinue the Directory, March 31, 1936.

In closing this account of the Directory it may be truthfully stated that it served the community faithfully and was a credit to the College that founded and directed its beneficent activities on behalf of doctors, nurses and institutions and the patients and their families who so often availed themselves of its efficient services.

MEMOIR OF DR. JAMES M. ANDERS *

By GEORGE E. PFAHLER, M.D., Sc.D.

The Death of Dr. James Meschter Anders on August 29, 1936, has removed from our midst a good friend, a great physician, an accomplished scientific investigator, a prominent teacher and a leader in medical and health organizations.

He was a Fellow of the College during 48 years, from February, 1888, to August 29, 1936. He was instrumental in inducing the College to appoint a Committee on Public Health Preventive Medicine and Public Relations, and served on this Committee ever since its incipiency January, 1913, to January, 1926, and continued as a member until his death. As Chairman of this Committee, he also served as Councillor.

Dr. Anders was the son of Samuel Dresher Anders and Christina Meschter Anders, born at Fairview Village, Montgomery County, Pennsylvania, July 22, 1854. He prepared for college in the local schools, and then in the Academic Department of a theological seminary under the auspices of the Mennonite Church at Wadsworth, Ohio. In 1877, he received the degree of Doctor of Medicine, and also the degree of Doctor of Philosophy from the University of Pennsylvania.

During his college course, he prepared an original essay on "Transpiration of Plants," and for this, together with the highest general average in his class, he won the George B. Wood prize. He was a member of the "Alfred Stille Medical Society," an under-graduate society. Following his graduation, he served as Resident Physician, and in 1888, he was elected Visiting Physician on the Medical Staff of the Protestant Episcopal Hospital.

His connection with the Medico-Chirurgical College began in 1889, when he was made Lecturer on Materia Medica. The following year, he was elected to the Chair of Hygiene and Pediatrics, and in 1891, he became Professor of Clinical Medicine. In 1893, he was made Professor of the Theory and Practice of Medicine and Clinical Medicine, which Chair he held until 1916, when

* Read January 11, 1937.

the Medico-Chirurgical College and Hospital of Philadelphia became merged into and with the University of Pennsylvania, as the Graduate School of Medicine. With the merger, Dr. Anders became Professor of Medicine in the new school. The latter Chair he held until July, 1929, when he became Emeritus Professor of Medicine in this Graduate School, and continued in this position until his death. Thus, for nearly half a century, Dr. Anders was intimately and luminously associated with medical education in Philadelphia.

In 1890, he was elected to the Board of Trustees in the Medico-Chirurgical College and Hospital Appreciating the importance of graduate medical education, and the lack of adequate facilities for such teaching in this or any other city, Dr. Anders suggested in 1914, a merger between the University of Pennsylvania and the Medico-Chirurgical College and Hospital, with the view of instituting the Graduate School of Medicine in the University of Pennsylvania. Two years later, this was an accomplished fact, and the development of this leading Graduate School of Medicine is in great part due to the leadership of Professor Anders. Incident to the development of this Graduate School in 1918, the Medico-Chirurgical School and Hospital was combined with the Polyclinic School and Hospital, whereupon Dr. Anders became and remained a member of the Board of Managers of these combined Hospitals, known later with other institutions as the Graduate Hospital of the University of Pennsylvania.

Dr. Anders greatest interests and pleasures in life seemed to be the service that he could render to his colleagues, his friends, his patients and the general public. At the end of ten, and also at the end of fifteen years after graduation, he prepared histories of his class.

He wrote the history of the Philadelphia County Medical Society for its 75th Anniversary. He founded the Library for the Philadelphia County Medical Society and gave to it liberal financial support.

He was a life member and served with the Academy of Natural Sciences in the Chair of "Forestry and the Relation of Plant Life to Health."

He served on the Advisory Board of the Department of Health during sixteen years and was instrumental in the establishment of the Annual Public Health Day, beginning May 3, 1917. He

exerted his influence and leadership toward the Control of Tuberculosis, Anti-Noise Campaign, Air Purification and, in general, seemed to forsee the needs of our City regarding public health in advance of most men.

He served as President of the Philadelphia County Medical Society in 1905; President of the Board of Trustees of the Perkiomen School for Boys; President of the Philadelphia Medical Club in 1905, and President of the American Climatological and Clinical Society in 1913. In 1920, he was elected President of the Pennsylvania Society for the Prevention of Tuberculosis; in 1921, President of the American Therapeutic Association; in 1923, President of the American College of Physicians, and was President of the American Society of Tropical Medicine. He had been President of the Society of the Descendants of the Schwenkfeldian Exiles. Dr. Anders was an active member in many other scientific organizations.*

His wide interests and leadership in medicine is indicated by his membership in the leading medical and scientific societies, and by his scientific contributions, of which he made one hundred and eleven. This list has been previously published.* Probably the most important of all his medical contributions, however, was his text book on the Practice of Medicine, which was published in 1898. Its popularity was indicated by the fact that it was followed by a total of fourteen editions. It is difficult to estimate the great good which this book has accomplished in the hands of the many students and practioners of medicine.

These scientific contributions together with the active participation in the scientific and health societies would seem too much for any one man, and yet, he seemed to find time for idealistic meditation, which is indicated by the book of poems published in 1934, by the friends of Dr. Anders, which contained ninety-one of his poems.

As a result of Dr. Anders' noble character, indefatigable work, keen interest and sympathy with all those with whom he came in contact, and because of his leadership in the various organizations to which he belonged, many honors have been conferred upon him. He was elected Chairman of the Medical Section of the American Medical Association in 1900, and two years later, delivered the Oration in Medicine before the American Medical Association in

* Detailed records have been published in the *Roster* of the Philadelphia County Medical Society, December 5, 1936.

New Orleans. In 1905, he was elected President of the Sixth International Congress on Tuberculosis, to be held in Washington in 1908, and during the same year, was made Honorary Member of the Academy of Medicine in Cleveland.

In 1910, the French Government made him an Officer de l'Instruction Publique et des Beaux Arts, as a recognition of his standing in medicine, and particularly for his discovery that all flowering plants and especially those of high fragrance have the power to convert the oxygen of the air into ozone. Again in 1923, the French Government further honored him by making him a member of the Legion of Honor of France.

In 1925, Dr. Anders was given the I. P. Strittmatter Award of Honor.

On Tuesday, November 29, 1927, several hudreds of Dr. Anders' colleagues and friends gave a testimonial dinner in honor of his Fiftieth Anniversary in the practice of medicine. At this dinner, numerous addresses made by distinguished men indicated the broad field of his endeavor, and as a further testimony of their admiration, these participants presented him with a bronze bust of himself, which is now located in and is the property of the Philadelphia County Medical Society.

On March 27, 1936, only a few months before his death, a testimonial dinner was given to Dr. Anders by the officials, teachers and Alumni of Ursinus College, in grateful recognition of his 42 years of distinguished service to this institution. In 1890, Ursinus College had conferred upon him the honorary degree of Doctor of Philosophy, and six years later, the honorary degree of Doctor of Laws, and in 1927, the honorary degree of Doctor of Science. He is the only man that has thus been thrice honored by Ursinus College.

In 1928, he was given the honorary degree of Doctor of Science by the University of Pennsylvania, and in 1929, he received the honorary degree of Doctor of Laws from the Pennsylvania Military College.

Dr. Anders was a gentleman of noble character, keen insight and foresight. He was sympathetic with all of those who were in trouble, and with those who had a noble ambition. His skill and sympathetic interest commanded the love and respect of his patients, the best service from his internes and associates, and the love and admiration of his friends.

MEMOIR OF DR. CHARLES H. FRAZIER *

By FRANCIS C. GRANT, M.D.

Charles Harrison Frazier was born in Philadelphia April 19, 1870. His early education was obtained at the Episcopal Academy and he entered the University of Pennsylvania graduating in the class of 1889. After some thought, he entered the medical school of the University of Pennsylvania. On the completion of four years in medicine in 1892, and two years' hospital interneships in the Hospital of the University of Pennsylvania and the Episcopal Hospital in Philadelphia, he spent a year or more in Europe studying surgery, surgical pathology and neurology under von Bergmann and Virchow. When he returned to Philadelphia, he received appointments to the surgical service in the Hospital of the University of Pennsylvania and to the teaching staff of the medical school. His ability as a teacher and organizer was promptly recognized by his appointment in 1901 as professor of clinical surgery and dean of the Medical School of the University of Pennsylvania.

Dr. Frazier had become interested in neurology during his sojourn in Europe. Philadelphia at this period was the center of a great group of neurologists. Mitchell was active and had inspired Mills, Dercum, Spiller, Burr, Weisenberg, Bond, Strecker and other young men to take advantage of the clinical and pathologic material available at Blockley and the Philadelphia Orthopaedic Hospital. Working with Spiller, Frazier showed that preganglionic section of the sensory root of the fifth nerve was as permanent a measure for the relief of the pain of major trigeminal neuralgia as avulsion of the ganglion and a much safer surgical procedure. The close cooperation of these two men—Spiller, a great and profound neurologist, and Frazier an ingenious technician and wise surgeon—was interesting and unique. One complimented the other, Spiller suggesting and outlining the problems and Frazier working out the practical surgical methods necessary for their clinical use. Chordotomy, or section of the

* Read January 11, 1937.

antero-lateral columns of the spinal cord, for the relief of pain was developed through this association of neurologist and neurosurgeon.

Dr. Frazier's contribution to neurosurgery included papers on tumors of the brain and spinal cord; the surgical treatment of major trigeminal neuralgia, especially with regard to subtotal section of the sensory root, the ophthalmic branches being thus spared to protect the eye; atypical or minor neuralgias; the morphologic development of the ganglion of Gasser, and section of the anterolateral tracts of the spinal cord for the relief of intractable pain.

Many honors came to Dr. Frazier. He was a member of the College of Physicians and the Academy of Surgery in Philadelphia, a Fellow of the American College of Surgeons, a member of the American Surgical Association, a member and president, 1928–1929, of the American Neurological Association; a founder member and president in 1922–1923 of the Society of Neurological Surgeons; a member of the Association for Research in Nervous and Mental Diseases, of the American Society for the Study of Goiter, and of the Deutsche Akademie der Naturforscher, and an honorary member of the British Neurological Society.

During the World War, he was a neurosurgical consultant to the Surgeon General and, with the rank of lieutenant colonel, was in charge of the neurosurgical service in Base Hospital 11, at Cape May, N. J., and Base Hospital 41, at Fox Hills, Staten Island, N. Y. In 1920 he represented the Surgeon General at the Interallied Surgical Conference in Paris, presenting a paper on injuries of peripheral nerves.

In 1922 he was appointed John Rhea Barton professor of Surgery in the University of Pennsylvania School of Medicine and chief of the surgical service at the Hospital of the University of Pennsylvania. His interests were confined to neurosurgical problems and thyroid surgery.

In 1925, he received the degree of Sc.D. from the University of Pennsylvania and in 1934, he was elected a trustee of the university.

Dr. Frazier was a great organizer and an indefatigable worker. The present surgical service at the Hospital of the University of Pennsylvania stands as a memorial to his efforts, a service in which the interrelationship between the teaching staff, the stu-

dents and the clinical material has been worked out to great mutual advantage. He was a pioneer in recognizing the value of surgical research and the need for close cooperation between the preclinical and the clinical departments, with particular emphasis on the physiologic and pathologic basis for every surgical procedure.

His great ability was to think clearly, to strip a problem of its nonessentials and to reach conclusions based on a large clinical experience and hard common sense. Energetic and hard driving he often seemed abrupt and curt. But those who knew him well, who had the opportunity to see his meticulous technique and unending patience during difficult intracranial operations and who were privileged to share his charming moments of relaxation held him in the deepest affection and esteem.

He died July 26, 1936, in North Haven, Maine. In the last months of his life he suffered intense pain. But his interest in his work never flagged. In spite of great physical distress, he insisted on attending the meetings of the Society of Neurological Surgeons and the American Neurological Association. Never did he complain; never did he lose interest in his work. Until the last, he was himself—alert, competent and charming, fighting down his discomforts so gallantly that it was an inspiration to all to see him.

MEMOIR OF DR. THOMAS B. HOLLOWAY*

By HUNTER H. McGUIRE, M.D.

Thomas Beaver Holloway was born in Danville, Pa., on March 24, 1872. He died at his home in Merion, Pa., Aug. 18, 1936. He was the son of S. Wm. Kerling Holloway and Ruth Ann Holloway. Dr. Holloway was twice married. By his first wife Cordelia Gearhart Woolley of Danville, Pa., to whom he was married in 1902, he had one son Thos. B. Holloway, Jr. In 1931 he married Florence Jane Laird of Philadelphia, who survives him.

His preliminary education, which was completed in 1888, was received at the Danville Academy. For a period of two years he was associated in business with his father. He then entered Lafayette College and graduated with the degree of B.S. in 1894. In 1897 his alma mater conferred on him the degree of M.S. and in 1926, that of Sc.D. He was a member of the Alumni Council of Lafayette for many years and was President of that body at the time of his death. During his college days he was always interested in athletics and established an enviable record as a member of the college baseball team on which he played for four successive seasons. He was a member of Chi Phi fraternity.

On biologic qualifications he was admitted to the second year of the Medical School of the University of Pennsylvania and graduated in 1897. After serving an interneship for two years at the Philadelphia General Hospital, Dr. Holloway began the general practice of medicine in Philadelphia. During this period of his life he evidently had in mind a surgical career because his subsequent hospital and teaching appointments were chiefly concerned with this branch of medicine. In 1899 he began work in the Surgical Dispensary of the University Hospital and was later appointed Assistant Demonstrator of Surgery in the Medical School. Following this service, from 1900 to 1902 he acted as assistant to the late Dr. Charles Frazier. In the summer of 1901

* Read January 11, 1937.

he took a graduate course in surgical pathology under Dr. Bloodgood at the Johns Hopkins Hospital.

Dr. Holloway's career in ophthalmology began in 1902 when he was appointed Assistant Surgeon at the Eye Dispensary of the University Hospital. In 1905 he was appointed Instructor in Ophthalmology in the medical school of the University of Pennsylvania, Associate in Ophthalmology in 1923, and Professor of Ophthalmology in 1924 succeeding Dr. G. E. de Schweinitz. In the field of ophthalmology his talents were quickly recognized and his services were sought by a number of important hospitals and teaching institutions in and around Philadelphia. Among these, where he served as attending ophthalmic surgeon or consultant, were the Philadelphia General Hospital, the Orthopedic Hospital and Infirmary for Nervous Diseases, the Maternity Hospital, the Henry Phipps Institute, the Norristown State Hospital, the Phoenixville Hospital, the Pennsylvania Institute for the Instruction of the Blind at Overbrook, and the Wills Eye Hospital. In 1914 he was elected Professor of Ophthalmology at the Philadelphia Polyclinic and in 1918 was appointed Professor of Ophthalmology in the Graduate School of Medicine of the University of Pennsylvania and made Vice-Dean for Ophthalmology in the latter institution in 1920.

At the time of the organization of this school Dr. Holloway was requested to formulate a curriculum for the department of Ophthalmology and it is largely due to his efforts that the course of study planned for this department has made for the school an enviable reputation for postgraduate work in this specialty.

His contributions to ophthalmic literature were numerous and important and, for the most part, were based upon careful analytical studies of clinical cases. His conclusions were never hastily drawn and were only reached after an exhaustive study of the subject in question and with due respect for the opinions of others. He had the happy faculty, both in his original papers and in discussion, of presenting his subject clearly and forcefully, and, invariably, left his audience with the impression that his arguments were based upon sound reasoning. He was well informed concerning general medical literature and could quote with amazing facility the literature pertaining to his specialty.

After entering private practice Dr. Holloway spent seven profitable years as the personal assistant of Dr. G. E. de Schwei-

nitz, both in the latter's office and at his clinic in the University Hospital. During this period it was only natural that an intimate professional and personal relationship should have developed between the two men. Many of his earlier papers were, therefore, presented with Dr. de Schweinitz as co-author and, indeed, this happy custom was continued for some years later. Among the most notable contributions emanating from this joint authorship were "Pulsating Exophthalmos," an Essay based upon sixty-nine case histories, "The Operative Treatment of Papilloedema Dependent upon Increased Intracranial Tension," and "Certain Visual Defects in Hypophysis Disease."

Under his own authorship and, frequently in association with other colleagues, Dr. Holloway presented to ophthalmologic or general societies well over one hundred interesting and important communications all of which have been published and preserved for posterity. As an extemporaneous speaker on medical subjects he spoke fluently and with conviction invariably displaying a most unusual knowledge of the current literature on the question under discussion.

The esteem in which Dr. Holloway was held by his associates resulted in his election to membership in numerous ophthalmologic, neurologic, pathologic and general medical societies in this country and abroad and in many of these he was honored with positions of distinction and responsibility. He was a past President and from 1918 to 1925 Secretary-Treasurer of the American Ophthalmological Society and for a period of ten years edited the Society's Transactions. In 1918 he was a member of the House of Delegates of the American Medical Association and Chairman of the Section on Ophthalmology from 1929 to 1930. Elected to Fellowship in the College of Physicians of Philadelphia in 1906, he served as clerk of the Section on Ophthalmology from 1909 to 1913 and became chairman of the Section in 1924. He was a member of the John Morgan Society, the American Academy of Ophthalmology and Oto-Laryngology, the Societe Francaise d'-ophthalmologie and the Ophthalmological Society of the United Kingdom as well as numerous other special and general medical organizations. As a member of the Board of Directors of the National Society for the Prevention of Blindness, he became one of the Society's most valued friends and counselors and took an active interest in its work.

Dr. Holloway had a large and influential private practice in addition to unusual opportunities for clinical and pathological research in the general and special hospitals with which he was connected. As a clinician he was painstaking, thorough, and skillful and never, for a moment, lost sight of the fact that the eye and its diseases were closely allied to general disease and to affections of the central nervous system. He was an expert ophthalmoscopist and retained, to a remarkable degree, a clear mental picture of what he had observed in the fundus. His description of the departures from normal were accurate, instructive, and illuminating. He displayed sound surgical judgment and as an operator did his work with meticulous care. Never slow to adopt new surgical procedures, if they had proved to be meritorious, he usually selected the type of operation which he himself did best and his results compared favorably with those of larger surgical experience.

As a teacher he admirably succeeded in imparting his knowledge in a clear, convincing manner emphasizing always the close relationship between ocular pathology and constitutional disease and ever striving to impress upon the undergraduate the importance of ocular examinations in the diagnosis of central lesions, cardio-vascular, and renal disease. As one colleague expressed it, "he continually sought to make the student eye conscious, rather than endeavor to make of them eye practitioners"—a difficult undertaking at best but one in which his efforts were appreciated by the student body.

Any student of medical history could well record the achievements of Thos. B. Holloway in his special field of activity but only his close personal friends can give a proper estimate of the outstanding characteristics of the man. Always an indefatigable worker and a diligent reader of ophthalmic literature, he found little time for relaxation and the demands of social life had little appeal for him. When, however, he was able to temporarily cast aside the burdens and responsibilities incident to his work and surround himself with a group of congenial friends there was never a more delightful companion, nor one who would enter into the spirit of the occasion with more enthusiasm. He took great delight in playing practical jokes on his intimate friends, had a keen sense of humor and a cheerful buoyant spirit which ever shed its influence on those around him. He was a kind and

indulgent father, a devoted and sympathetic husband and a true friend. No task was too hard, no effort too great, when his help and cooperation were sought by friends or professional associates. While a member of several Clubs he was rarely able, because of his active professional life, to use them except for the entertainment of his friends. After the days' work was done he preferred the quiet of his home where he could be surrounded by his family and, not infrequently, by his close associates.

The writer had the privilege of knowing Tom Holloway intimately for a long period and saw him frequently during his active years and throughout his last illness. This friendship, which will ever be a cherished possession, endured until the end. Any appraisal of his life, filled as it was with great professional distinction, high honors, and the esteem of his fellowmen, would not be complete without reference to the courage he displayed during times of adversity. He had reverses and, at times, faced conditions which "try mens souls" but never, for a moment, did they embitter him or alter the tenor of his life. Fully aware for several months that his last illness would terminate fatally, he faced death, "the last enemy to be destroyed," with calmness and a courage which excited the admiration of those who were privileged to be with him in those trying hours. Only eager to be spared long enough to "put his house in order' and to dispose of some of his most cherished possessions, he complacently accepted the inevitable outcome without fear or resentment and in his last days must have derived consolation from the thought that he had fought a good fight and had kept the faith.

MEMOIR OF DOCTOR EDWARD J. KLOPP *

By JOHN H. GIBBON, M.D.

Doctor Edward J. Klopp, a Fellow of this College since October 1, 1913, died in the Jefferson Hospital on September 19, 1936, after an illness of several months. The immediate cause of his death was streptococcic endocarditis accompanied by cerebral emboli. This sad and untimely termination of a life of hard work and brilliant accomplishment was a sad loss to Philadelphia surgery.

Klopp was born in Sheridan, Pennsylvania, on June 10, 1880. He graduated at the Philadelphia College of Pharmacy and Science in 1901 and at the Jefferson Medical College in 1906. He served a two year interneship at the Jefferson Hospital and was then made Chief Resident Physician. In 1925 he was given a B.S. degree by the Jefferson Medical College.

He began his surgical career in the service of the late Francis T. Stewart in both the Jefferson and Pennsylvania Hospitals and soon acquired other hospital associations which resulted in a wide and varied surgical experience. In 1928 he was made Associate Professor of Surgery at the Jefferson Medical College, and in 1930, was elected Professor of Surgery. For many years he was Attending Surgeon to the Pennsylvania Hospital, and during his last illness, was made Chief of one of the surgical services. At the time of his death he was Attending Surgeon to the Memorial and Delaware County Hospitals and Consultant to the Girard College.

Although not a constant contributor to surgical literature, he wrote a number of brief but valuable papers on intestinal resection, diseases of the breast, on surgery of the thyroid and on blood transfusion. He had done an unusually large number of colonic and rectal resections for cancer with excellent results. Every surgeon seeing him operate was struck not only with the delicacy and thoroughness of his technic, but with the quiet manner in which he faced and overcame complications and difficulties. He

* Read January 11, 1937.

possessed a rare dexterity and gentleness in all his operative work. These qualities were recognized early in his career and resulted in the acquirement of a large surgical practice. In addition to his manual dexterity, Doctor Klopp always displayed a well developed diagnostic knowledge and a sane surgical judgment.

During the War he was a member of the Medical Advisory Board of Philadelphia.

During this period he was doing a large amount of surgery at both the Jefferson and Pennsylvania Hospitals. Although not a brilliant lecturer he was the best kind of a teacher. He loved his students and was always kind and helpful to them, and in return, they exhibited for him a respectful appreciation of his sterling qualities.

Doctor Klopp served this College at various periods on the Council and as a member of important committees and was deeply interested in its welfare.

Doctor Klopp was married to Miss Emma Riale of Johnstown, Pennsylvania, in 1911 and she with three daughters and a son survive him.

MEMOIR OF DR. ARTHUR VAN HARLINGEN *

By BURTON CHANCE, M.D.

On September 23, 1936, there departed this life the oldest Fellow of the College, Arthur Van Harlingen, who was elected to the Fellowship in 1873.

Dr. Van Harlingen was born in Philadelphia, October 25, 1845, of Dutch and Scotch ancestry. Passing his boyhood and youth in this City, where he attended private schools, he then went on to Yale, entering the Sheffield Scientific School of that University from which he graduated in 1864, at the early age of nineteen! Having from boyhood desired to enter Medicine, he matriculated at the University of Pennsylvania and graduated in 1867, immediately going to Blockley. After serving the usual term there, he, in 1869, went down to the Pennsylvania Hospital, where he was registered as the 105th Resident Physician and served for eighteen months. On leaving the Pennsylvania he entered into private practice, opening an office on 15th Street below Sansom.

In his medical school days his intimate friend was Louis A. Duhring with whom he was closely associated and by whom he was inspired to study diseases of the skin. Ever after he was identified with Dermatology; from 1871 to 1883 he was assistant to Professor Duhring at the University of Pennsylvania.

When it was suggested that a "Polyclinic Hospital and School for Graduates in Medicine" should be instituted in Philadelphia Dr. Van Harlingen became greatly interested and active in the organization of that institution, assuming the department of Dermatology which he conducted as Professor from 1895 to 1912. In the meantime he attended clinics at the Children's Hospital and later at the Jefferson Hospital, where for some years he was Clinical Professor in the Medical School.

He became a member of the American Dermatological Society shortly after it was founded in 1878, and served a term as President of that Society. Besides numerous papers and reports, Dr.

* Read January 11, 1937.

Van Harlingen in 1884 published a "Handbook on the Diagnosis and Treatment of Skin Diseases," which ran through four editions.

Withdrawing from practice about fifteen years ago Dr. Van Harlingen retired to his home at Rosemont. Since then all his contemporaries are gone. I have found no one to give me accounts of his early days when he was influentially active in practice.

My own association with him dates from 1898, but not intimately until about 1910. Certain ones who had served as his clinical assistants in years gone by, knowing of my intimacy, have spoken to me from time to time of the thoroughness with which Dr. Van Harlingen studied his cases. In his clinic services he would never adopt a careless or arbitrary routine. Each individual applying for relief was studied with the greatest care and received every consideration from the Chief, who possessed an uncanny discernment of the psychic nature of his patients. During the consultations he brought into use all his senses, exhibiting keenness of sight; an extraordinarily delicate and sensitive touch and an acuteness of smell, all far greater than that appreciated by ordinary persons.

His influence on his assistants must have been profound. One, an internist of wide experience, now retired from practice, once told me that he had served for the space of three years or so in the Skin Clinic at the old "Polyclinic" when it was located at Broad and Lombard Streets, and, although he did not thereafter attempt dermatological practice, he owed Dr. Van Harlingen a great debt because of his methods and his understanding of the relations which local manifestations of disease might bear to a general malady; that affections of the skin might be but expressions of obscure internal disorders. So intimate an association as was his with such a clinician was bound to have influence upon one who sought to acquire precision in his own studies in the wider avenues of medical practice.

Dr. Van Harlingen claimed for himself the ability to as readily call a disease by its appropriate name from the visible appearance of the lesions as to recognize a friend and call him by his name from his knowledge of the characteristics which he had associated with his friend's personality.

While he was fully aware of the great worth of modern chemico-biological reactions in the ascertainment of the etiology of disease, Dr. Van Harlingen had but little patience with those, who, without employing to their utmost ability methods of examination by their unaided senses, rushed their patients off for complicated, time-consuming and costly "laboratory testing" which procedures had in Dr. Van Harlingen's experience frequently resulted in "negative findings." Once he had made up his mind what course of treatment he had decided upon, "complement fixation" tests, of one type or another, offered him but little additional service.

Notwithstanding his criticism of certain modern practices, he was kindly and helpful to his students. He frequently voiced his regret that they of later times had not had so long an experience as he had had. Modern hygienic regulations of human life have had their effects upon dermatological pathology and have greatly modified the visible appearances of the lesions so that the expressions of even common types of skin diseases are not as vivid and bizarre as were presented to observers fifty years ago. Dr. Van Harlingen had had the good fortune to have noted the progress of such modifications, which in some cases, became so marked as almost to resemble a new disease. And through the accumulations of his mental pictures he would wish that the younger men might be able to see what he saw in the newly arrived patients.

After his retirement he would be consulted occasionally by old-time patients. I learned that only a few weeks before his demise he had received and prescribed for a person from New England whose dermatitis had persisted for seven years, in spite of many consultations with others. The "old doctor" was bethought of and regarded as a "last resort." The man requested that Dr. Van Harlingen should receive him, whose visit was highly successful, as the sufferer was relieved by the regimen prescribed, and at a subsequent visit presented himself with a clear skin.

Until his withdrawal from active practice Dr. Van Harlingen kept abreast with medical thought. He read widely and possessed a remarkably clear recollection of what he read. His familiarity with the English classics was unusual, but his interest in recent publications both poetical and in prose was equally ex-

tensive; indeed, he was omnivorous. In his later years his reading was largely in current fiction and sociologic subjects.

In my intercourse with Dr. Van Harlingen he showed an unusual feature by a decided unwillingness to dwell upon the past, a most singular characteristic in my experience with men of advanced years. He was always looking forward and would ask only for the latest news. In my endeavors to learn from him about medical men and things of days gone, I was met by silence. Yet, whenever he would tell of earlier days his expressions of opinion concerning the men of those times were always courteous and kindly. Apt in repartee, his humor might be said to have been wittily ironical if not cynical.

In his long life his health had been steadily uniform. In his early manhood he passed through a severe attack of typhoid fever; and, when about fifty years of age, he fell into a period of ill-health which lasted for two or three years, from which he fully recovered, and all went well until beyond eighty, when he was seized with pneumonia yet his recovery was compete. In his last years there was only gradual failure of strength preventing him from taking his daily walks. Mentally and intellectually all went well till the last fortnight.

He was buried from the Church at Rosemont; the interment following in the churchyard of the "Redeemer" at Bryn Mawr.

In 1882 while they were in London, England, he was married to Miss Bessie Butler Whitney, of Bryn Mawr, Pennsylvania. Two sons were born to them; one, John Martin, and Mrs. Van Harlingen survive him.

MEMOIR OF DR. FRANCIS T. STEWART *

By R. MAX GOEPP, M.D.

Francis T. Stewart was born in Philadelphia December 2, 1877, the son of William Francis and Emily Randall Stewart, and received his education in the public schools of that city. After only one year in the Central High School he matriculated in Jefferson Medical College and received his degree of M.D. in 1896 at the early age of 19. His interneship was served in the Philadelphia Polyclinic (now the Graduate School and Hospital of the University of Pennsylvania) and in the Pennsylvania Hospital, where he completed his service as Chief Resident in November 1900. He at once began practice, having already, through his intensive hospital training, become one of the ablest operators in the city.

He married Matilda Keller, of Philadelphia, in 1901.

He was a hard worker and progressed rapidly in his career as operator, teacher and writer:

1900 Chief of Outpatient Surgical Dispensary, Pennsylvania Hospital.
1902 Chief Clinical Assistant to Dr. W. W. Keen and Associate Attending Surgeon, Jefferson Medical College.
1903–1918 Surgeon to Germantown Hospital.
1903–1910 Professor of Surgery, Philadelphia Polyclinic.
1904 Associate Editor Therapeutic Review.
1909 Member Society of Clinical Surgery.
1910 Professor of Clinical Surgery, Jefferson Medical College.
1912 Member Société Internationale de Chirurgie.
1915 Surgeon to Pennsylvania Hospital.
1917 Member American College of Surgeons.

Among the papers kindly put at my disposal by Mrs. Stewart is a letter from Dr. William J. Mayo dated September 20, 1917—"We felt that the College (American College of Surgeons) is far too useful a factor in the profession for you to remain on the out-

* Published in accordance with a Resolution of Council passed March 24, 1936.

side and, waiving all formalities of application, you have been unanimously elected to membership.

"The same action has been taken in regard to Dr. John Chalmers DaCosta, Dr. John H. Gibbon and Dr. Charles L. Gibson."

Dr. Stewart was of Scotch-Irish ancestry. His father, William Francis Stewart, was left an orphan at the age of three by the tragic death by lightning of both parents during the customary evening prayer. Although ample means had been provided for the education of himself and his three sisters, the money was squandered by the guardian in an unfortunate business venture, and the boy at the age of nine was left to shift for himself and complete his education as best he might, attending night school during the winter and hard studying by himself during the summer. In spite of these handicaps he rose to prominence in the community and became an official in the organization of the Philadelphia *Public Ledger*. He served with distinction in the Civil War and in 1880 was elected to the Pennsylvania House of Representatives and continued to serve his State in that capacity until his death in 1900, being reelected ten times.

In the midst of his many duties in hospital and private practice Dr. Stewart found, or rather made, the time for many contributions to medical literature. He improved a number of operations and devised several to which his name is attached in the textbooks. In 1907 appeared his Manual of Surgery, which he wrote in the short space of two years. Another important contribution is the Section on the Surgery of the Heart and Blood Vessels in the American Practice of Surgery. A complete list of his shorter papers would occupy too much space, but some of the more outstanding should be mentioned in this memoir:

A Case of Severed Spinal Cord in which Myelorrhaphy was followed by Partial Return of Function. 1902.
Idiopathic Dilatation of the Colon. 1900.
Foreign Bodies in Air Passages. 1900.
A Special Article on the Case of President McKinley. 1901.
Case of Ligation of Carotid for Hemorrhage of Cheek. 1901.
Suture of the Heart. 1904.
New Method of Immediate Enterostomy. 1905.
Suture of Femoral Artery. 1905.
Volvulus of Omentum. 1905.
Arteriotomy for Thrombosis and Embolism. 1907.

Reconstructive Endoaneurysmorrhaphy. 1907.
Five Cases of Suture of the Heart. 1903.
Amputation of Breast by Transverse Incision. 1915.
Method of Gastrectomy. 1914.
Method of Gastroenterostomy. 1918.
Method of Gastrostomy. 1918.

It was while I was serving my interneship at the Philadelphia Polyclinic and later as a colleague that I knew and learned to respect and love Dr. Stewart and profited by his teaching and inspiration. For a man of his great ability and important achievements he was surprisingly modest and unassuming in his demeanor. If anything he under-rated his abilities. In his lectures and clinical demonstrations his language was simple and direct, covering the subject under discussion thoroughly and without burdening the class with unessentials—the true mark of the born teacher. I like to recall an occurrence which illustrates his kindly and helpful attitude toward his associates. It was soon after I had become a member of the faculty that he told me one day he had admitted a case of aneurysm for wiring and suggested that I demonstrate the patient to the class before the operation. This I was of course glad to do and, when everything was in readiness for the wiring, what was my surprise when he turned to me with the remark "why don't you do the wiring yourself now that you have located the aneurysm. It isn't a surgical job anyhow, inserting a needle in the dark." He who was one of the first to perform the now common lumbar puncture! But he was always ready to give the other fellow his opportunity.

Dr. Stewart's interests were not limited to medicine. He supplemented his early education by devoting his few spare hours to the cultivation of general literature, the fruits of which were apparent in his speeches and addresses. He had a natural flair for languages and, wishing to keep up his knowledge of French and German, he proposed to the late Dr. Horace Jenks and myself that we meet at intervals for a German "conversazione." I have the pleasantest recollection of these evenings. Each of us would prepare a short paper in German on some medical subject to provide a basis for discussion, after which we would subside into more or less German—usually less—general conversation. I rather suspect we exemplified Eugene Field's definition: "A con-

versazione is a thing at which you speak the language in the which you are particularly weak."

Among his many other gifts was the God-given gift of speech, which he was often called upon to display for the delight of his hearers. It was said of him by an admirer that "he had the divine gift of humor. When he made a speech or delivered an address, wit fell in diamond showers from his lips."

One cannot help speculating what heights he would have scaled had he lived the normal span of life. As it is he accomplished enough in his forty-two years of life to assure him an honored name in the annals of medicine and an abiding place in the memories of his friends and associates. Was it a premonition of his early end that drove him on in his indefatigable labors? In my recollection of him during the last year or two of his life I have a feeling that I got such an impression at times from the peculiar gravity—even wistfulness—of his manner and conversation, on one special occasion particularly. I have always, in my own mind, placed him in the same category with three other members of our profession whom it was my privilege to know and whose careers came to an untimely end: my former Chief, J. Alison Scott, Frederick A. Packard and A. O. J. Kelly.

In concluding this memoir I cannot forego quoting some passages from an appreciation by his friend and associate, Dr. John Chalmers DaCosta, which has never appeared in print. I have already taken the liberty of quoting him above.

"He was the personification of the highest integrity and honor, personal and professional. The jingling of the guinea never lured him from the path of Duty. He never played to the gallery and the brass drum and cymbals made sounds which were not agreeable to his ears. He was invariably truthful and courageous and never failed to speak out openly and emphatically when he felt that an error should be refuted, a mistake should be prevented or an impostor should be kept from acquiring his booty."

"He brought fame to his school and was one of the ablest men ever connected with it. I was proud to have him for a colleague. Had he lived the ordinary span of life his name would have belonged with our two or three greatest celebrities."

"We have lost him. We have with us of him only his fragrant memory. His place can never be exactly filled. His personality will not be duplicated. We loved him. We sorrow at our loss. We miss him and will do so always. We set him up as the best of examples of what a surgeon, a teacher, and a man ought to be."

THE ANNUAL ADDRESS OF THE PRESIDENT *

By ALFRED STENGEL, M.D.

Fellows of the College:

It is my very agreeable duty to report on the state of the College at this time and to express the greatest satisfaction in the completion of an eminently satisfactory year.

At the ten Stated Meetings of 1936 addresses of a very high order of excellence were presented. Seven of these were given by Fellows of the College and three by invited lecturers from other cities. These latter were presented by Dr. James B. Murphy, of New York City, a member of the Rockefeller Institute; Dr. Marshall N. Fulton, Physician to the Peter Bent Brigham Hospital of Boston; and Dr. Thomas M. Rivers, member of the Rockefeller Institute.

The attendance left little to be desired as Mitchell Hall was from three-quarters full at most meetings to a capacity audience at some.

It is especially desirable that I should mention the fact that one of our own Fellows, the Vice President of the College, Dr. Müller, was selected by the Committee and delivered the Mütter Lecture on December 2, 1936.

The financial affairs of the College, like those of all other similar Institutions, suffered seriously during the years of depression and required very careful study and many adjustments to prevent any falling off in the work of the Committees and the upkeep of the Hall and Library.

The Officers and especially the Finance Committee made a thoroughgoing study of the many funds and endowments of the College to rectify conditions which in the course of the years had caused some confusion and I am very happy to report that the College is now not only conducted on a balanced budget, but that each of the special funds now has in it precisely the amounts which were originally donated. This has been made possible by a transfer of some sums from the so-called "permanent" Fund

* Read January 11, 1937.

of former days to the Funds which had become depleted and by adjustment between several Funds where costs of operation had sometimes been taken out of current funds of the College or the "permanent" fund instead of from the appropriate fund from which payments should have been made. The books of the College are now in such form that the future continuance will be easy and also in accordance with the best business methods.

A change in the summer closing of the College was made during the past summer which seems to have met with general satisfaction. Instead of a long period of closing, the College was closed for a briefer time and kept open on a part-time basis during the remaining weeks. This plan proved so agreeable to the Fellows that it should probably be continued in the future.

The total membership of the College at the present time is 672, including all classes of members which are as follows:

Resident Fellows	601
Non-Resident Fellows	46
Honorary	6
Special Library, Privilege Group	19
	672

Of these 54 new members and 1 Honorary Fellow were elected during the year.

The Council of the College has continued the exercise of caution in recommendation of nominees for consideration by the College and has supplemented its former method of investigating the merits of those who were proposed by establishing a special Committee which studies the qualifications with particular care before a recommendation is made to the Council as a whole. It is of course eminently desirable that the quality of the Fellowship of the College should be kept at a high level.

The function of the College at its beginning one hundred fifty years ago was undoubtedly to supply a common meeting-ground for the physicians of that day. As time has advanced and the country has grown, "organized medicine" as it is called has very properly been established and County, State and National Associations representing the whole of the medical profession have been established. There should be no conflict between such organized groups and this College.

At the time of the founding of the College, medical men were few in Philadelphia and a large proportion of them were men

who had had the benefit of European education so that they possessed the qualifications that seemed requisite for inclusion in its membership. It must be recalled also that there was no other form of medical organization and the Fellowship of the College, practically speaking, represented the whole of Medicine in this community. As years went on and large numbers of practitioners were engaged in Medicine, greater selection undoubtedly became necessary that the College might maintain the high average of capacity which its Founders had set.

It has never been, nor should have been, any part of a nominee's qualification that his personal or social status was a prerequisite to admission. A well qualified physician with proper medical and ethical ideals should be the type we seek. The higher the standard of excellence in clinical or scientific training nominees possess the more desirable should be their inclusion among our Fellows, but it would be regrettable indeed if well trained physicians of excellent ethical character were excluded because their way of life was not in academic spheres.

The affairs of the Library have been maintained in as flourishing a state as our finances permitted. The increased costs of magazines, books and binding have created problems sometimes difficult to solve. Large endowments are seriously needed to keep the library in the forefront as it has so long been.

The "Friends of the Library" under the leadership of Dr. C. W. Burr have made notable additions of incunabula and other rare medical publications and for this support, which the current funds of the College could not provide, deserve the sincere thanks of all of us.

It would be an oversight if your President failed to make special mention of the notes on important accretions of ancient publications under the title of "Fugitive Leaves," the contribution to the worthwhile activities of the College by our very excellent Librarian. It would seem to me personally regrettable if the College failed to find a way to publish in monthly or quarterly form these excellent reviews and essays. Nothing could more thoroughly fulfill one of the essential features of this College—that of indicating its interest in medical history and scholarship.

The annual Transactions of the College in these modern days have lost some of their former value. Nearly or quite all of the presentations, addresses or lectures delivered at our meetings are

published in current journals and except for epitomized reference to minor presentations our Transactions have lost much of their former value for Fellows. The volumes may still have value on account of exchanges secured from other medical bodies, but it seems probable to me that periodic publication of reviews and essays of accretions or old publications in the Library would be more appreciated by exchange institutions.

It is my sorrowful duty to name a large number of our Fellows who have died during the year. These whom I mention are in addition to those whom the Censors have designated as worthy of having Memoirs presented.

Fellows Deceased from December, 1935 to December, 1936

Dr. Ward Brinton, elected March, 1900, died December 29, 1935.
Dr. Albert A. Ghriskey, elected March, 1902, died December 28, 1935.
Dr. McCluney Radcliffe, elected October, 1908, died February 28, 1936.
Dr. Theodore LeBoutillier, elected March, 1904, died March 4, 1936.
Dr. William Turner Van Pelt, elected June, 1903, died April 26, 1936.
Dr. Henry K. Dillard, elected May, 1908, died May 19, 1936.
Dr. Clarence A. Patten, elected May 1925, died June 2, 1936.
Dr. Joseph Price Tunis, elected November, 1894, died June 10, 1936.
Dr. Horace J. Phillips, elected May, 1907, died July 25, 1936.
Dr. Eugene Lindauer, elected November, 1904, died July 29, 1936.
* Dr. Lewis Stephen Pilcher, elected 1906, Honorary Fellow, died December 24, 1934, but his death was only brought to attention of Secretary on June 3, 1936.

Finally, as this night's meeting ends my terms of service as President of the College, I beg to express my heartfelt appreciation of the high honor I have received at the hands of my fellow-members and to promise for the future my continued interest in the welfare of the College.

REPORT OF THE FRIENDS OF THE LIBRARY 1936

The Friends of the Library increase in numbers—but not fast enough. Last year there were forty-two, who contributed to the purchase of books significant in the history of medicine a total of $460. This is an encouraging start, but it represents the personal activity of a relatively small part of our fellowship. We have one of the great medical libraries of the world. What makes it great and not just an ordinary medical library is the accumulation of older and rarer works. The limited funds of the College do not permit the library itself to make the needed additions. The Friends must see to it that these rare and valuable older works become available here for the students of the future as well as of the present.

During the past year eight books, including two incunabula, were purchased. The books were described in the *Fugitive Leaves* at the time of purchase, and the authors and titles are recorded in the Annual Report of the Library.

We held our first Annual Meeting in Thomson Hall of the College on November 6, 1936. Our guest speaker, Dr. Henry E. Sigerist, Director of the Institute of the History of Medicine at the Johns Hopkins University, made a profound impression on our audience with his talk on "Civilization and Disease," which he prefaced by saying that it was to our library he turned first when searching for the rarer medical works he needed for his studies. The books presented by the Friends of the Library during the last two years were on exhibition at this meeting.

The Friends of the Library is not a closed corporation. It should include every Fellow of the College—however small the contribution he feels able to make—who recognizes the duty to help carry on the traditional and proper functions of his great library.

Charles W. Burr, M.D., *Chairman*
Executive Committee of the
Friends of the Library

ANNUAL REPORT OF THE LIBRARY COMMITTEE 1936

Mr. President: In accordance with the Ordinances and By-Laws of the College, the following report of the Library Committee for the year 1936 * is herewith submitted:

Every library counts among its most treasured assets that personal interest of its constituency which inspires the unsolicited gift of books, periodicals, and other documentary material. It is gratifying, therefore, that this report discloses a healthy increase in the number of those who have chosen to express in a pragmatic fashion their interest in the library's welfare. This is the wine, as well as the staff, of life to a library; and it is, to expand the metaphor, a sign of a living and useful organism.

In many ways, as the statistics that follow will show, the library picture has brightened during the past year. Most remarkable perhaps has been the progress toward an adequate systematization and development of the Periodicals Department. The figures below tell a part of the story. To them should be added the suggestion that this nerve center of a modern medical library comes more and more to be recognized as such, with a consequent obligation on our part to see that the increasing demands shall be adequately met. Much remains to be done to enable this department to function in a manner commensurate with its importance; but the solid basis already achieved may be regarded as a happy augury of the further progress which time and a fuller budgetary tide will bring.

The opinion was expressed, in last year's report, that there were several factors which might tend to decrease the number of visitors to the library, among them the then new restriction on the number of visitors' book-withdrawal cards at the disposal of each Fellow. It is apparent from the attendance figure for the year that these factors have probably not had a significantly restrictive influence on the number of visitors. The total of visitors for the year is, in fact, slightly ahead of that for last year. Some small part of the increase may doubtless be attributed to the shorter summer closing, although the increase in the number of

* I.e., October 16, 1935–October 15, 1936. The Annual Reports from this library have customarily been based on the corresponding yearly period.

day-time hours in which the library was open was all but matched by the decrease in the number of evening hours.

For the first time in several years it was found possible to close the library for approximately one week only. The advantage to our readers was clearly demonstrated. Looked at from the viewpoint of average attendance per hour, the attendance for August (the month in which the library has customarily been closed) fell very little short of that for May, when the full winter schedule was still in force. The desirability of keeping the library continuously functioning is generally recognized. The comparatively small size of the staff and the increasing number of repairs required by a building not now in the first flush of its youth are obstacles which must be overcome, if the desirable is to become both practicable and practice. However, as the old saying has it, *aut inveniemus viam aut faciemus*—where there's a will there's a way.

The number of volumes received from all sources was materially larger than that of last year. Thirty-nine fewer volumes were accessioned, this in part being accounted for by the very much larger number of duplicates among the volumes received, in part by the fact that a large shipment of periodicals was not returned by the binders in time to be accessioned. Parodoxical as it may at first seem, this reduction in the number of accessions covers an actual increase in the purchase of books and periodicals. The increased purchases form in fact one of the pleasantest features of the year in retrospect. Gains have been made in acquiring important material necessarily lost to the library during the depression, but, because of the difficulty often encountered in obtaining material in some cases only a few years old, patience and an adequate reserve fund are still required as hand-maidens to diligence.

The institution of the Committe on College Collections, as it relieves the library of the care of the several collections of a non-bibliothecal character, likewise discharges it of the pleasant duty of recording additions to these collections. Additions have been made, however, and since a number of them have passed to the new Committee through the library's hands, it is suggested that the proper acknowledgments may be found in the report of the Committee on College Collections.

The acquisition of rare and important works in the history of medicine, an ancient tradition of this library, has not lagged.

The Friends of the Library have not failed in friendship. Among them, however, *facile princeps* in the art of generous giving, stands Dr. Charles W. Burr, who has steadily helped to build in this library the scholar's road to progress. It is pleasant to remember that, in the notoriously ungrateful race of man, it is the scholar who is least addicted to ingratitude. This library has, in the past, matched the wisdom and generosity of its friends in the purchase of rare and historical medical works. The last few uneasy years have necessitated a practical disappearance of these purchases. But it is generally recognized that the continuance of this side of a library's activities is not only appropriate but necessary for a center of medical culture in a community, and to the continuance of this honorable tradition it is hoped that we may rededicate ourselves in the near future.

Inventory

	1936	1935
Incunabula	411	409
Rare Books and others of special interest added during the year	34	
Manuscripts	510	502
Other Bound Volumes	144,562	142,886
Unbound Reports and Transactions	25,272	25,088
Unbound Periodical "Reserves"	4,556	4,533
Unbound volumes more or less incomplete	3,105	3,074
Total number of volumes in the library	178,448	176,492
Other unbound material:		
Pamphlets (less than 100 pages)	230,729	226,377
Theses and Dissertations	33,913	32,856
Total of unbound material	264,642	259,233

	1936	1935
Total of Bound and Unbound Material	443,090	435,725
Duplicates	11,158	10,202
Portraits (including 96 oil and 284 other, framed portraits in the care of the Committee on College Collections)	31,537	30,998

Distribution of This Material

	Bound	Unbound	Total
General Library	141,321	297,571	438,892
On permanent deposit:			
Gross Library	3,784	4	3,788
Library of the Obstetrical Society of Philadelphia	217	0	217
Mütter Museum *	193	0	193
Total	156,673	329,112	443,090

* The books of the Mütter Museum are not permitted to be removed from the College building.

Current Periodicals

Periodicals currently received in the library number 1,254 titles. The following tabulation lists the periodicals by country of origin:

	By Purchase	Exchange	Gratis	Total
1. American (U. S.)	117	64	268	449
2. Australia and New Zealand	1	4	3	8
3. Belgium	8	8	4	20
4. British Isles	76	24	8	108
5. Canada	3	6	8	17
6. Cuba and Porto Rico	0	6	12	18
7. France and Colonies	108	19	11	138
8. Germany and Austria	181	5	1	187
9. India	3	8	5	16
10. Italy	65	17	6	88
11. Japan, Korea, Manchuria	3	18	13	34
12. Mexico	0	6	3	9
13. Netherlands and Colonies	7	0	4	11
14. Russia	0	11	4	15
15. Scandinavian countries (Denmark, Finland, Norway, Sweden)	13	7	0	20
16. South America	4	25	27	56
17. Spain	6	6	5	17
18. Switzerland	7	1	2	10
19. Miscellaneous (fewer than 5 each: British Africa, China, Czecho-Slovakia, Egypt, Esthonia, Hungary, Latvia, Lithuania, Jugoslavia, Libania, Philippine Islands, Poland, Portugal, Roumania)	2	25	6	33
Totals 1936	604	260	390	1,254
1935	563	538		1,101

Not included in the above total are 36 other titles of which one or more numbers came to the library during the past year, but whose regular receipt has still to be established. New titles added during the year number 100: 30 by purchase, 44 in exchange, 26 gratis. The other 53 titles in the year's increased number are those of periodicals whose receipt had lapsed but has now resumed. Two journals formerly purchased are now received gratis; one other, in exchange.

The total number of issues received was 13,974, exclusive of duplicates (which numbered 6,681). Of the former number, 252 were missing back numbers supplied in response to claims, completing 39 volumes. Nine other volumes were completed by the purchase of single issues, and forty-one were purchased complete, to fill in back files.

The number of visitors to the Periodicals Room during the year was (approximately) 5,000.

Readers' Use of the Library

Number of visitors:

	Visitors		Fellows		Total	
	1936	1935	1936	1935	1936	1935
Days (291)	8,730	8,179	2,185	2,094	10,913	10,275
Evenings (36)	606	975	154	173	760	1,148
	9,336	9,154	2,337	2,267	11,673	11,421

Circulation of books:

	1936	1935
Number of volumes taken out	6,975	8,966
Number of volumes consulted in the library	45,373	46,357

The number of books "consulted in the library" includes only those supplied on demand. Readers have access to the bound volumes of periodicals and works of reference kept on the shelves in the Reading Room, and the Fellows of the College have access to the book stacks. There are, therefore, many volumes consulted of which no accurate record can be kept.

The library has, regretfully, maintained but one evening opening a week, though it is acutely conscious of the hardship that this has worked on a number of its readers. It is hoped that in the near future the Friday evening opening may be restored, or that a Sunday afternoon opening may be substituted for it, and the Library Committee will welcome from Fellows and other users of the library expressions of preference for one or the other opening.

Inter-library Loans:

The library has sent bound volumes on inter-library loan to thirteen libraries, representing six states in the Union, and has borrowed on the same terms from two.

Use of the Study Rooms:

Number of volumes used in these rooms during the year, 989 (1935: 941).

The increase in the use of the study rooms has been notable. Throughout the greater part of the year every room has been almost constantly occupied, and it has been necessary to commandeer for the use of Fellows even the Packard and Lewis Rooms, hitherto seldom, if ever, required for this purpose. The Students' Room, likewise, has shown an increase in use, which may be expected to develop as its existence becomes more widely known.

Photostats:

122 prints have been furnished to Fellows; 365 prints to other than Fellows; 1,910 prints to the library. The last include an incunabulum (bringing the total of photostated incunabula to 309), portraits, copies of rare books on loan, etc.

We have continued to supply photostats of our incunabula at cost to other medical libraries, and our own photostat copies have been requisitioned for use by a number of scholars who have come to the library to consult them.

Acquisitions and Accessions

Received from all sources:

1936: Volumes (including 388 unbound reports and 1,054 duplicates): 3,160.

1935: Volumes (including 212 unbound reports and 248 duplicates): 2,217.

	1936	1935
Pamphlets	7,167	10,917
Theses and dissertations	3,996	5,800
Numbers of various journals	20,655	20,432

Accessions:

1936: Volumes (719, by purchase; 590, by gift; 409, by exchange); 1,718. (Books, 859; Periodicals, 859.)

1935: Volumes (869, by purchase; 614, by gift; 274, by exchange): 1,757. (Books, 727; Periodicals, 1,030.)

Donations:

The individual donors for the past year number 323 (1935: 238).

The library is indebted for large gifts of books, pamphlets and unbound periodicals to the following donors: Rev. O. T. Allis, P. Blakiston's Son & Co., Dr. W. N. Bradley, Dr. C. W. Burr, Dr. B. Chance, Dr. W. B. Davis, Mrs. F. X. Dercum, Dr. W. A. N. Dorland, Dr. A. A. Eshner, Dr. L. F. Flick, Dr. J. P. C. Griffith, Dr. S. McC. Hamill, Haverford College Library, in exchange (Medical Library Association), Miss Anna S. Kite, Dr. E. B. Krumbhaar, Dr. G. C. Kuesel, J. B. Lippincott Co., Dr. J. McFarland, Mrs. A. J. Ostheimer, Mrs. M. Radcliffe, Dr. D. Riesman, W. B. Saunders Co., Dr. A. C. Sautter, Dr. G. E. de Schweinitz, Dr. W. G. Spiller, Dr. J. E. Talley, Mrs. W. J. Taylor, Dr. J. M. Thorington, University of Pennsylvania, Dr. J. Walsh, Weekly Roster, Dr. F. D. Weidman, Dr. P. F. Williams, Dr. G. B. Wood.

Various publishing houses have presented volumes as follows: P. Blakiston's Son & Co., 5; F. A. Davis Co., 8; Lea and Febiger, 24; J. P. Lippincott Co., 7; W. B. Saunders Co., 46.

Sixty volumes were presented by the following authors or editors: F. Alexander, K. E. Appel, D. Arrom, L. F. Barker, H. Bartlett, E. H. Bloodgood, E. Boyd, I. Bram, P. Brown, E. M. Brockland, E. C. Buehler, W. W. Cadbury, A. Carrel, G. Crile, H. Cushing, S. Cobb, P. M. Dawson, L. I. Dublin, O. C. Durham, N. M. Eberhart, J. Favill, H. Friedenwald, R. Friedman, C. C. Furnas, E. G. Gardiner, S. A. Gladstone, L. Goldbacher, B. J. M. Harrison, F. H. Heise, T. B. Holloway, B. Jaffe, W. M. Johnson, W. F. Koch, B. E. Kuechle, C. D. Lockwood, N. D. C. Lewis, V. H. Long, A. J. Lotka, R. McCarrison, E. B. McKinley, B. S. Maloy, F. Mateer, J. F. Montague, N. Mumey, E. H. Ochsner, D. Perla, H. Roesler, M. S. Rose, M. Sanger, W. G. Spiller, A. O. Squire, W. L. Taussig, H. Thomas, J. A. Walfer, J. J. Walsh, L. Wilder, W. L. Wilson, H. F. Wolf, Wu Lien-teh.

Four volumes were sent by the publishers at the request of the following authors or editors: C. S. Butler, H. Crew, P. de Kruif, L. A. Turley.

Exchanges

Copies of the Transactions to the number of 338 were sent either as gifts or in exchange for 311 publications of other organizations.

We have not distributed books or journals on exchange account through the Medical Library Association. The library has, however, received nineteen such distributions, which aided materially the constant effort to complete our files.

Theses and dissertations to the number of 3,464 have been received from the following European Schools of Medicine with which we exchange publications at the present time: Universities of Amsterdam, Basel, Berlin, Bonn, Breslau, Erlangen, Giessen, Göttingen, Greifswald, Halle, Heidelberg, Jena, Kiel, Köln, Königsberg, Lausanne, Leiden, Liège, Louvain, Lund, Paris, Rostock, Tartu, Tübingen, Upsala, Würzburg.

Work of the Cataloguers

Number of works classified, shelf-listed, and for which cards were filed	756
Cards typewritten, examined and filed	5,785
Library of Congress cards and other cards altered and filed	8,126
Pamphlets and reprints subject-headed and arranged alphabetically by subject, and by author under the subject	2,388

The cataloguers have continued work on the various indexes enumerated in the preceding Annual Report. The appearance of the first volume of the fourth series of the Index-catalogue has necessitated some revision of our subject-headings, since our system of classification remains based generally on that of the Index-catalogue.

Miscellaneous Activities

Exhibitions. The 700th anniversary of the birth of Arnold of Villanova furnished the subject of an extended exhibition of the printed works of that doctor of law, theology, philosophy and medicine. The exhibition contained six 15th century editions of his works, exclusive of the "Regimen" incunabula containing his commentary. A number of individual requests to view our illustrated incunabula led to a formal exhibition of these books and, incidentally, to a useful reference index of them. Another of the larger exhibitions attracting rather more than the usual attention was the first of a series illustrating the development of medical historiography from the time of Celsus to the present day. In addition to the larger exhibitions, each meeting of the Section on Medical History was supplied, as usual, with an exhibition of books, manuscripts and other material illustrating the subjects discussed at the meeting.

Projects of Student-Aid Workers. The library was fortunate in obtaining, through the efforts of the Chairman of the Library Committee, the part-time services of four medical students who very ably worked on the following projects: (1) collating the periodicals catalogue with the actual stack holdings; thereafter supplying cards which were missing in the catalogue, and making corrections on others with inaccurate notations; (2) compiling an author and subject index of the complete file of the College's *Transactions,* from 1793 to 1936; (3) compiling a card index of every Fellow of the College from 1787 to date, each card containing a skeleton biography with a reference to the location of a more substantial one; (4) indexing several volumes of scrapbooks which it is believed will be found to contain valuable historical material hitherto practically inaccessible.

Book-Preservation. An important project was started during the summer, when between 3,000 and 4,000 of the library's rare books were treated for preservation of their bindings. It is expected that, by continuing this work systematically, at least ten years will be added to the life of the, in many cases valuable, bindings. The timeliness of this project is perhaps best demonstrated by reference to a professional survey which shows that about 25 per cent of all the leather-bound books in the library have dry rotted beyond the point where they could be saved by this treatment.

Rearrangement of Volumes in the Reading Room. A realignment of books in the Reading Room has brought the section of New Books to the better-lighted south wall, an uninterrupted run of the bound periodicals, and a more central location for the dictionaries and other reference volumes. Each floor of the stacks has been provided with shelves on which readers may rest books which they are consulting, and with stools.

Extra-mural. The great Union Library Catalogue of Philadelphia and vicinity is now well on the way to completion. In this achievement the library has played a proper part, being one of the first to offer its support to the project and likewise one of the first to have its cards reproduced for the catalogue.

To the forthcoming second edition of the "Census of fifteenth century books owned in America" the library has contributed a revised list of its incunabula.

The library continued to send out with each issue of its *Booklist* the *Fugitive Leaves* containing, among other things, descriptions of important acquisitions. The librarian contributed articles and reviews to a number of medical periodicals; addressed the Osler Club of Saranac Lake on "The Fifteenth-century Arts of Memory" (illustrated by photostats of incunabula in the library collection); talked briefly before the Section on Medical History at several of its meetings; was elected a member of the Executive Committee of the Medical Library Association at its annual meeting in June, and at the same time assumed the editorship of its *Bulletin.*

With the close of the year 1936 the College of Physicians completes the 149th year of its existence. Looking about us at a world so miserably darkened by the temporary dominance of uncontrolled passions and prejudices, the mind is bereft of power to imagine what the next 150 years may have in store for us. But this imagining is, after all, no necessity. The past 150 years have left the College a magnificent heritage. For us, it is well to remember that, "as work is the best relish," so it is the best guarantee of a worthy future.

Acquisitions of Incunabula and Other Works of Special Interest

Where the source is not specified, it may be assumed that the book was purchased from the Library's Fund for Rare Books.

A single asterisk indicates that the edition, a double asterisk that the title, is not listed in the Index-catalogue of the Army Medical Library.

Incunabula

**Albertus Magnus. De muliere forti. Cologne, Quentell, 1499. Hain 465

Gift of the Friends of the Library.

The high-pressure title was adopted by the great 13th century polymath from a rhetorical figure of the uxorious King Solomon. Unlike most of the Albertian works, genuine or apocryphal, this was printed but once in the 15th century. It is primarily theological (which is to say, not without medical interest). This copy marks the twenty-second item in our 15th century Albertian collection.

**Beroaldo, Filippo. Oratio proverbiorum. Bologna, B. Hectoris, 1499. Hain 2966

Gift of the Friends of the Library.

Whether or not a professional physician, the distinguished Professor Beroaldo of Bologna (d. 1505) cannot well be overlooked in a collection of medical incunabula. His preoccupation with the comparative statuses of philosopher, orator, and physician in society is evidenced by several works already represented in our collection. The present one, dedicated, like most of the others, to one of his students, attempts to outline, by means of famous proverbs or "sayings" of classical authors, the moral way of life. Significantly, Hippocrates, Galen, and Celsus are drawn upon as familiarly and naturally as are the writers *litterarum elegantiorum.*

Other Works of Special Interest

Achillini, Alessandro. Opera omnia. Venice, Scotus, 1551. [See: *Booklist,* 1936, No. 2 (Feb.).]

Gift of Charles W. Burr, M.D.

Aegidius Romanus. De formatione humani corporis in utero. Venice, Pentius, 1523. [See: *Fugitive Leaves,* 1936, No. 11 (Oct.).]

Gift of Charles W. Burr, M.D.

pseudo-Apuleius. Herbal; from the ninth century manuscript in the abbey of Monte Cassino. . . . Leyden, Brill, 1935. [See: *Booklist,* 1936, No. 1 (Jan.).]

Gift of Charles W. Burr, M.D.

Bartholinus, Thomas. De angina puerorum Campaniae Siciliaeque epidemica exercitationes; accedit De laryngotomia . . . Renati Moreau . . . epistola. Paris, de Varennes, 1646.

Gift of Charles W. Burr, M.D.

This is the one contemporary description of the combined typhus and diphtheria epidemic which spread throughout lower and central Italy, 1642–1650. In the "Epistola" Moreau describes, says Osler, "the operation of 'bronchotomy, as it ought to be called,' which he had twice performed." Moreau, in a prefatory *Approbatio,* finds this work of the learned Doctor Bartholinus most worthy of being brought to light; and subjoined is the statement: "I, the undersigned doctor of medicine of Paris, concur in the above opinion. Patin."

Beza, Theodorus. De peste quaestiones duae explicatae: una, sitne contagiosa: altera, an et quatenus sit Christianis per secessionem vitanda. Geneva, Vignon, 1580.

As might be suspected from the title, the author of this plague tract was a prominent theologian; he was professor of Greek at Lausanne; later, a preacher at Geneva of the theological party of Calvin.

*Billroth, Theodor. Wer ist musikalisch? Nachgelassene schrift, hrsg. von Eduard Hanslick. Berlin, Paetel, 1895.

Gift of the Librarian.

The attention directed recently by several books towards Billroth's participation in the musical life of Vienna and towards his friendship with the composer Brahms suggests that this little-known work of his on the physiology of music merits a closer examination than it hitherto seems to have enjoyed.

Bonetus, Theophilus. Mercurius compitalitius sive Index medico-practicus. Geneva, Chovet, 1682. [See: *Booklist,* 1935, No. 7 (Dec.).]

Gift of the Friends of the Library.

*Bullokar, John. An English expositor: teaching the interpretation of the hardest words in our language. . . . London, J. Legatt, 1641.

Gift of Charles W. Burr, M.D.

Dr. Bullokar, whose father, William, was an early disciple of phonetic spelling, is best known as the author of this "little vocabulary" which was first published in 1616. This is the third edition, the last published in his life-time; an eighth edition is recorded as having been published as late as 1719, suggesting a popularity which is further attested by the copious manuscript annotations entered by the early owner of our copy.

**Chabraeus, Domenicus. Stirpium sciagraphia et icones. Geneva, De Tournes, 1677. [See: *Booklist*, 1935, No. 7 (Dec.).]

Gift of Burton Chance, M.D.

*Chomet, H. The influence of music on health and life. Translated from the French by L. A. Flint. New York, Putnam, 1875.

Gift of Joseph Walsh, M.D.

This is perhaps rather a history of music than a consideration of its physiologic or therapeutic aspects, but there are two chapters—one on sound, the other on the "sonorous fluid" in animals—which are not without interest of a kind.

Cockburn, William. An account of the nature, causes, symptoms and cure of loosnesses (sic). 2 ed. London, Howlatt, [1710].

In Exchange.

No first edition seems to be recorded under this title; but at the head of the first page of this text occurs the phrase "Alvi profluvia," which indicates that this is the second edition of the more elegantly titled "Profluvia ventris" published in 1701. This is the same celebrated Dr. Cockburn the acquisition of whose "Oeconomia corporis animalis" was announced in our 1934 Report. Medical adviser to Swift (despite the latter's close association with the more authoritarian Doctors Freind, Arbuthnot and Garth), Cockburn was described in his later years as "an old, very rich quack."

Colonna, Fabio. Phytobasanos, sive Plantarum aliquot antiquorum . . . historia; cui accessit Vita Fabi et Lynceorum notitia adnotationesque Jano Planco auctore. Milan, Aere, 1744.

One of the most beautiful of the early herbals, and one of the first (the original edition appeared in 1592) to attempt a scientific approach, the author being led to this attempt by his inability to obtain a remedy for the epilepsy from which he suffered. The title is an individual joining of two Greek words, and may be translated as "plant torture"; it was apparently employed, says Arber, "to explain that he had subjected the plants to ordeal by torture, in order to wrest from them the secret of their identity." The figures are the first etchings on copper used in botanical illustration.

Cornacchini, Pietro. Della pazzia, dissertazione, & due discorsi accademici sopra la medicina elettrica, con alcune cure fatte per mezzo della medesima. Siena, Bindi, 1758.

Gift of the Friends of the Library.

The dissertation on madness is based on the works of such established authorities (for the time) as Boerhaave, Van Swieten, Hoffman (Fried-

rich), Bonet and Mead, as well as on those of obscurer lights. The two discourses on the medical use of electricity reflect chiefly, in the emphasis on the author's Italian contemporaries, Pivati and Veratti, rather than on Krantzenstein and Jallibert, the wonder-working experimenters at the dawn of modern electrotherapy.

*Galen. [Ars medicinalis.] Basel, Barth. Westhemerus, 1541.

**——. Varia opera. Paris, de Colines, 1534. [See: *Booklist,* 1936, No. 1 (Jan.).]

Gift of Charles W. Burr, M.D.

*——. De diebus decretoriis. Lyons, Rovillius, 1560. [Bound with the Montuus below.] [See: *Booklist,* 1935, No. 6 (Nov.).]

Gift of Charles W. Burr, M.D.

**——. De praegnitione. Lyons, S. Griphe, 1540.

Gift of Charles W. Burr, M.D.

The printer of this rare edition, an excellent humanist, is noted for the accuracy and clearness of his texts of classic authors.

*Gwinne, Matthew. In assertorem chymicae, sed verae medicinae desertorem, Fra. Anthonium . . . succincta adversaria. London, Field, 1611.

Gift of the Friends of the Library.

Francis Anthony (1550–1623), against whom this attack was directed, was a noted empiric and chemical physician (unlicensed) who made a fortune from a secret remedy called *aurum potabile.* Of the two early pamphlets published by Anthony in defense of it, his D. N. B. biographer (Dr. J. F. Payne) says, they "are probably very rare, and the present writer has not been able to find them." A copy of the first, "Panacea aurea," it may be remarked, is in this library; a copy of the second (to which Gwinne's book is in answer), in the Huntington Library. Gwinne was a brillant figure of his time, physician, poet, philosopher, musician, dramatist, first professor of physic at Gresham College in London. In 1605 he was appointed physician to the Tower; in the same year a play of his was presented before the King (James I), which, though it pleased His Majesty, failed to keep him awake. In the above work (dedicated to James), his only medical writing, Gwinne "proves that the *aurum potabile* contained no gold, and that if it had, the virtues of gold as a medicine in no way corresponded to its value as a metal." The S. T. C. lists but three other known copies of this, the first, edition.

Heister, E. F. Apologia pro medicis. Amsterdam, Jansson, 1736. [See: *Booklist,* 1936, No. 1 (Jan.).]

Gift of the Librarian.

Johnson, Abraham [pseudon.] Lucina sine concubitu. A letter humbly addressed to the Royal Society; in which is proved, by most incontestible evidence, drawn from reason and practice, that a woman may conceive and be brought to bed without any commerce with man. London, Cooper, 1750.

"This work, the evident object of which was to burlesque experiments reported by the Royal Society, is generally ascribed to Sir John Hill, whose rejection by that body certainly led him to attack it in other publications. Horace Walpole and Lowndes give the authorship to the Rev. H. Coventry." [Index-catalogue, 1 ser.]

Keyser, Peter Dirck. Glaucoma: its symptoms, diagnosis, and treatment. Phila., Lindsay, 1864.

Gift of Harry Friedenwald, M.D., through William Zentmayer, M.D.

Dr. Keyser, a pupil of von Graefe, and a prominent Philadelphia ophthalmologist for over thirty years, was the first in this city to deliver courses of clinical lectures on diseases of the eye. He was a prolific writer in the clinical field. The above work is notable, as has elsewhere been observed, for its rather remarkable consanguinity with a work of another pupil of von Graefe, the "Glaucoma, and Its Cure by Iridectomy" of J. Soelberg Wells, published in London earlier in the same year.

Langton, William. An address to the public on the present method of inoculation. . . . London, Horsfield, 1767.

Magee Fund.

"The public need not be informed, how much it is the Interest of Inoculators to propagate and continue a Practice, which, in a shorter Time, produces more net Profit, than anything ever invented by the greatest Empiric; which is fully confirmed, if the Report be true, that Mr. *Sutton*, in the three last years, has made forty or fifty thousand Pounds." Daniel Sutton and his assistants inoculated with unripe small-pox virus, 1764–66, upwards of 20,000 persons, with no deaths resulting therefrom.

**[Lefils.] Comment on étudie la médecine à Paris; histoire de Fiascaud (bien aimé), ex-étudiant, ex-noceur, viveur, polkeur, aujourd'hui père de famille et propriétaire. Paris, Aubert, n.d. [19th cent.].

Gift of O. H. P. Pepper, M.D.

From medicine to the *mairie* by easy stages—a deplorable tale in caricature, illustrating the decline of the west.

Marteau, Pierre-Antoine. Description des maux de gorge épidémiques et gangréneux, qui ont regné à Aumale & dans le voisinage. Paris, Vallat la Chappelle, 1768.

In Exchange.

An account of an epidemic of diphtheria, highly praised by Bretonneau, to whom we owe the present name of that disease.

Montuus, Hieronymus. Halosis febrium; Chirurgica auxilia; De infantium morbis. Lyons, Tornaesius, 1558. [Bound with the Galen, "De diebus decretoriis," above.]

Pitcairn, Archibald. Dissertatio de curatione febrium, quae per evacuationes instituitur. [Edinburgh], Mosman, 1695.

——. Apollo staticus, or the art of curing fevers by the staticks; invented by Dr. Pitcairn and published by him in Latin; now made English by a well-wisher to the mathematicks. Edinburg, J. W., 1695.

This dissertation, through the attacks and counter-attacks which it engendered, resulted in the suspension of the redoubtable Pitcairn "from voting in the college [of Physicians] or sitting in any meeting thereof." It is suspected, however, that this controversy, as well as other medical ones in which he was engaged, represented political and personal, fully as much as scientific, antipathies.

Rollo, John. Observations on the acute dysentery, with the design of illustrating its causes and treatment. London, Dilly, 1786.

In Exchange.

The first major work of a prominent 18th century surgeon, who is best remembered for his description of meat diet treatment in cases of diabetes mellitus. The signature, "Dr. Darwin," on a fly-leaf of this copy is almost certainly that of Rollo's celebrated contemporary, Dr. Erasmus Darwin.

*Rush, Benjamin. An inquiry into the effects of ardent spirits upon the human body and mind. 4 ed. Phila., Dobson [n.d.].

Gift of Walter Mendelson, M.D.

Servetus, Michael. Christianismi restitutio. Nuremberg, (Rau), 1790. [See: *Fugitive Leaves,* 1936, No. 9 (April).]

Gift of the Friends of the Library.

*Sylvius, Jacobus. In Hippocratis et Galeni physiologiae partem anatomicam isagoge. Venice, Valgrisius, 1555. [See: *Booklist,* 1935, No. 7 (Dec.).]

Gift of the Friends of the Library.

Thomson, Adam. A discourse on the preparation of the body for the small-pox; and the manner of receiving the infection. Phila., B. Franklin and D. Hall, 1750. [See: *Booklist,* 1935, No. 6 (Nov.).]

Gift of the Friends of the Library.

Vesalius, Andreas. Icones anatomicae. Munich, 1934. [See *Fugitive Leaves,* 1936, No. 9 (April).]

Gift of John H. Gibbon, M.D.

*Wierus, Johannes. De praestigiis daemonum. . . . Basel, Oporinus, 1536. [See: *Fugitive Leaves,* 1936, No. 13 (Dec.).]

Gift of the Friends of the Library.

Manuscripts

Apothecaries' bills (4). Aix, 1710–1771.

Gift of E. B. Krumbhaar, M.D.

A comparison of these fees (not to mention the remedies themselves) with those current at the time in this country might advantageously be made.

Barton, B. S. Manuscript letter, dated Nov. 20, 1797. [See: W. S. Middleton, "Benjamin Smith Barton," *Annals of Medical History,* n.s. 8: 484–85 (Nov., 1936), where the letter is reproduced in facsimile.]

Gift of Miss M. C. Curtin, through W. N. Bradley, M.D.

Holloway, Thomas B. Concerning the etiology of uveitis.

Gift of the Author.

This paper was written in 1921 and read before the general assembly of the Academy of Ophthalmology and Oto-Laryngology at its meeting in Philadelphia. This meeting was the first where an attempt was made to give short instructional courses. On account of its length, the paper was never sent to a journal for publication. [Author's foreword.]

Mitchell, S. W. [Manuscript verse.] [See: *Fugitive Leaves,* 1936, No. 8 (March).]

Gift of Charles W. Burr, M.D.

This enigmatic (because untitled) little piece, through its publication in the *Leaves,* is found to have a paper-cutter as its protagonist, to have been published in a newspaper column many years ago, and to have found a fair degree of currency thereby.

Spiller, W. G. The first fifty years of the Philadelphia Neurological Society. Read before the Philadelphia Neurological Society at the College of Physicians, January 25, 1935.
Gift of the Author.

[Wood, George B.] Manuscript notes of his course on the practice of medicine, 1859–60, taken by J. Solis Cohen.
Gift of J. Solis Cohen, M.D.

Miscellaneous

A number of gifts, as stated in the preceding part of this Report, have passed through the library into the hands of the Committee on College Collections. In its own right the Library is privileged to acknowledge various welcome gifts of autographs, photographs, and similar memorabilia from the following: *Mr. Franklin Bache; Doctors C. W. Burr, S. Solis Cohen, W. A. N. Dorland, J. H. Elliott, A. A. Eshner, J. H. Gibbon, H. I. Goldstein, E. B. Krumbhaar; Professor D. P. Lockwood; Dr. G. W. Norris; Mrs. A. J. Ostheimer; Doctors William Pepper, Hugo Roesler; Mr. Arthur Sharp, Mrs. J. Madison Taylor, Miss Anne H. Todd, Miss Martha Wager.*

Summary of Expenditures from the Funds

Endowed Library Funds

Henrietta Rush Fales Baker Fund	$ 288.23
Luther S. Bent Fund	34.59
William T. Carter Fund	0.00
Gerardus Clarkson Fund	45.21
Francis X. Dercum Fund	164.59
Louis A. Duhring Book Fund	51.35
Augustus A. Eshner Fund	213.61
Friends of the Library No. 1	0.00
John D. Griscom Fund	148.59
Samuel D. Gross Fund	0.00
Richard H. Harte Fund	172.89
Charles T. Hunter Fund	9.66
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J. William White Fund	198.68
Casper Wistar Fund	177.98
George B. Wood Fund	463.95
S. Lewis Ziegler Fund	257.17
Library General Account. (Consisting of incomes from the Binding Fund, Catalogue Endowment Fund, Duhring Library Fund, and Morris Longstreth Fund)	21,545.76

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Approved:
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Chairman

GIFTS IN 1936 TO THE COLLEGE COLLECTIONS

Four dry-point etchings by the artist, Chevalier Jackson. Presented by him Feb. 24,

495—Penna. Hospital
496—Woman's Medical College of Penna.
497—Old Blockley
498—University of Penna.

Photograph of H. W. Cattell, Hinsdale, Willetts, J. K. Mitchell, de Schweinitz, Osler, Otto. This is the original from which the reproductions were made that appeared in the Osler volumes. Presented by T. B. Holloway, June 30,—499.

Three curios, mementos, and miscellaneous.

967—Pair of wooden vaginal retractors. Presented by Edward B. Hodge, May 14.

969—Votive offering to St. Leonard. Primitive iron model of a dog. Presented by Edward B. Krumbhaar, February 5.

970—Facsimile of the Van Leeuwenhoek microscope in the possession of the University of Utrecht. Presented by Prof. P. H. Van Cittert, through Herbert Fox, February 5.

Ten badges—illustrating types worn at medical gatherings. Presented by Edward B. Krumbhaar, April 1. 800–808; 858.

Pasteur Centenary Medal, Paris 1922—654. Presented by Herbert Fox in April.

Harvard Tercentenary Memorial Medal—734. Presented by Edward B. Krumbhaar, October 5.

Two medals presented by Dr. Walter Mendelson, November 20. 735—A. Jacobi; 736—Wm. H. Welch (bronze portrait plaque).

The following 47 medals were presented by Edward B. Krumbhaar, April 1. 685—Ambroise Paré; 686—Sbaralea and Malpighi; 687—Frederick Hoffman; 688—Boerhaave; 689—Albrecht von Haller; 690—Joseph Priestley; 691—Benjamin Rush; 692—Albinus Soemmerring; 693—Georges Cuvier; 694—Vleminckx; 695—Alexander von Humboldt; 696—F. H. A. F. von

Humboldt; 697—Pharmaceutical Society of Paris, 1796; 698—Ecoles de Médecine; 699—Au Soulagement de L'Humanité; 700—International Medical Congress, 1881; 701—University of Pennsylvania Medical Alumni Society; 702—Gold medal of the Royal Society of Medicine; 703—Centenary of French Academy of Medicine; 704—Mary Ellis Bell Prize for Undergraduate Medical Research; 705—Fair for U. S. Sanitary Commission; 706—Vaccination Medal (Napoleonic); 707—Private Medical Establishment; 708—Montrose Lunatic Hospital; 709—Dundee Infirmary; 710—Baron Spolasso. Advertising Token; 711—Dr. Eady's Advertising Token; 712—Ferro Malesci. Medicine Advertisement; 713—International Physiological Congress, Boston 1929; 714—Gerhard Medal of Phila. Pathological Society; 715—Medical Garden, Free Entrance Token, Amsterdam; 716—Charles Delorme, 1628. Physician in Ordinary to the Dauphin; 717—Pharmacists Token; 718—Prof. F. Widal; 719—Simon Flexner; 720—Nobel Prize Medal (Replica of Banting's Medal); 721—XIV Congresso Internazionale Di Fisiologia; 722—IX International Congress of Medical History, Bucarest, 1932; 723—Foundation of Val De Grace (Louis XIV); 724—Foundation of General Hospital (Louis XIV); 725—Foundation of Les Invalides (Louis XIV); 726—Chirurgiens de la Marine (Louis XV); 727—Societé de Médecine Legale de France; 728—Plague at Barcelona; 729—Vovi Deo Exercituum (Louis XIV); 730—Lusitania Medal; 731—Sesquicentennial Medal, Philadelphia.

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LIST OF PRESIDENTS OF THE COLLEGE, LECTURES AND PRIZES

(Supplement to lists in Transactions, 1932, 3s, LIV, pp. vii, lxi)

PRESIDENTS OF THE COLLEGE

1931–33 FRANCIS R. PACKARD
1934–36 ALFRED STENGEL

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

1932	Not awarded	
1933	Harry Shay, M.D., and J. Gershon-Cohen, M.D.	Philadelphia
1934	Ernst Gellhorn, M.D.	Chicago
1935	Not awarded	
1936	Harry Eagle, M.D.	Philadelphia

NATHAN LEWIS HATFIELD PRIZE AND LECTURESHIP

1933	XII	Dr. Arturo Castiglioni	Padua
1935	XIII	(a) Michael Heidelberger, Ph.D.	New York
		(b) William H. Park, M.D.	New York
1936	XIV	(a) Eliot R. Clark, M.D.	Philadelphia
		(b) Eugene M. Landis, M.D.	Philadelphia
	XV	James B. Murphy, M.D.	New York

MARY SCOTT NEWBOLD LECTURES

March 23,	1933	XXIX	Burton J. Lee, M.D.	New York
May 3, 5,	1933	XXX	Ronald T. Grant, M.D., M.R.C.P.	London (Eng.)
Oct. 4,	1933	XXXI	Sir Andrew MacPhail, Kt., B.A., LL.D., M.R.C.S., O.B.E.	Montreal
April 4,	1934	XXXII	John B. Flick, M.D.	Philadelphia
Nov. 7,	1934	XXXIII	Walter B. Cannon, M.D.	Boston
May 1,	1935	XXXIV	C. U. Ariëns Kappers, M.D., Sc.D.	Amsterdam
Oct. 2,	1935	XXXV	C. N. H. Long, M.D., Sc.D.	Philadelphia
Mar. 4,	1936	XXXVII	(a) Franklin L. Payne, M.D.	Philadelphia
			(b) L. G. Rowntree, M.D.	Philadelphia
Oct. 7,	1936	XXXVIII	Thomas M. Rivers, M.D.	New York

MÜTTER LECTURES

1933	Arthur B. Duel, M.D.	New York
1934	Charles H. Frazier, M.D.	Philadelphia
1935	Harris P. Mosher, M.D., Sc.D.	Boston
1936	George P. Muller, M.D.	Philadelphia

WEIR MITCHELL ORATION

1934	S. W. Ranson, Ph.D., M.D.	Chicago

JAMES M. ANDERS FUND LECTURE

1934	Wade H. Brown, M.D.	New York
1935	John L. Rice, M.D.	New York
1936	Thomas Parran, M.D., Surgeon-General, U. S. Public Health Service	Washington, D. C

FELLOWS

JANUARY, 1936

* For degrees and titles see TRANS., 1932, LIV., xi.
‡ For degrees and titles see TRANS., 1933, I., No. 1, x.
† For degrees and titles see TRANS., 1934, II, No. 3, liii.
§ For degrees and titles see TRANS., 1935, III., No. 2, lvi.

ELECTED

1934. DR. WILLIAM OSLER ABBOTT, University Hospital, 36th and Spruce Sts., Phila.†
1912. DR. WILLIAM H. F. ADDISON, Med. Laboratories, University of Pennsylvania, Phila.*
1926. DR. FRANCIS HEED ADLER, 313 S. 17th St., Phila.†
1914. DR. THOMAS G. AIKEN, Berwyn, Pa.*
1936. DR. FRED CUTLER ALDRIDGE, Wayne, Pa.§
1936. DR. FAY KNIGHT ALEXANDER, 8835 Germantown Ave., Phila.§
1906. DR. FRANCIS OLCOTT ALLEN, JR., 2216 Walnut St., Phila.*
1932. DR. FREDERICK H. ALLEN, 1711 Fitzwater St., Phila.*
1896. DR. HERMAN B. ALLYN, 3910 Chestnut St., Phila.*
1935. DR. BERNARD J. ALPERS, 111 N. 49th St., Phila.§
1933. DR. ROBERT S. ALSTON, 121 Walnut Lane, Phila.‡
1905. DR. BROOKE M. ANSPACH, 1827 Spruce St., Phila.*
1930. DR. KENNETH E. APPEL, 408 Berkley Rd., Haverford, Pa.*
1905. DR. L. F. APPLEMAN, 308 S. 16th St., Phila.*
1935. DR. GEORGE L. ARMITAGE, 400 E. 13th St., Chester, Pa.§
1922. DR. JOHN H. ARNETT, 2116 Pine St., Phila.*
1920. DR. G. MASON ASTLEY, 812 N. 63d St., Phila.*
1935. DR. JOHN L. ATLEE, 37 E. Orange St., Lancaster, Pa.
1935. DR. JOHN L. ATLEE, JR., 37 E. Orange St., Lancaster, Pa.
1914. DR. J. HAROLD AUSTIN, Maloney Clinic, Univ. Pa., Phila.*
1906. DR. JAMES A. BABBITT, 1912 Spruce St., Phila.*
1935. DR. THEODORE F. BACH, 1900 Rittenhouse Sq., Phila.§
1937. DR. EMILY P. BACON, A.B., M.D., Professor of Pediatrics, Woman's Medical College of Penna.; Visiting Pediatrist, The Woman's Hospital and Mary J. Drexel Children's Hospital. 2104 Spruce St., Phila.

1910. Dr. Benjamin F. Baer, Jr., 1927 Spruce St., Phila.*
1916. Dr. Percy L. Balentine, 407 Weightman Bldg., 1524 Chestnut St., Phila.*
1898. Dr. Tilghman M. Balliet, 3920 Sansom St., Phila.*
1934. Dr. Joseph Bank, 737 W. Moreland St., Phoenix, Ariz.†
1911. Dr. Everett P. Barnard, 1820 S. Rittenhouse Sq., Phila.*
1932. Dr. Everett S. Barr, West Chester, Pa.*
1924. Dr. Henry J. Bartle, 1930 Chestnut St., Phila.*
1931. Dr. William Bates, 2029 Pine St., Phila.*
1932. Dr. Oscar V. Batson, 3502 Hamilton St., Phila.*
1921. Dr. Edward L. Bauer, 345 S. 19th St., Phila.*
1933. Dr. John T. Bauer, Pennsylvania Hospital, Phila.‡
1922. Dr. Henry C. Bazett, Haverford, Pa.*
1908. Dr. E. J. G. Beardsley, 1919 Spruce St., Phila.*
1930. Dr. Joseph T. Beardwood, Jr., Suite 402, 2031 Locust St., Phila.†
1935. Dr. Herman Beerman, Chatham Court Apts., 49th and Locust Sts., Phila.§
1932. Dr. Charles A. Behney, 133 S. 36th St., Phila.*
1934. Dr. Moses Behrend, 1738 Pine St., Phila.†
1930. Dr. William Parks Belk, Times Medical Bldg., Ardmore, Pa.*
1936. Dr. Benjamin Tertius Bell, M.D., Assistant Surgeon, Orthopedic Hospital; Associate in Orthopedics, Graduate School of Medicine, Univ. of Pa.; Assistant Orthopedist, Home of the Merciful Saviour; Assistant Orthopedist, Bryn Mawr Hospital. 1930 Chestnut St., Phila.
1923. Dr. David H. Bergey, 206 S. 53d St., Phila.*
1934. Dr. Sydney Geoffrey Biddle, 257 S. 16th St., Phila.†
1918. Dr. Arthur E. Billings, 2020 Spruce St., Phila.*
1917. Dr. Joseph C. Birdsall, 4610 Spruce St., Phila.*
1933. Dr. Paul A. Bishop, Penna. Hospital, Phila.*
1908. Dr. P. Brooke Bland, 1621 Spruce St., Phila.*
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1928. Dr. Russell S. Boles, Rittenhouse Plaza, Phila.*
1923. Dr. Earl D. Bond, 707 Old Lancaster Road, Bryn Mawr, Pa.*
1911. Dr. Charles W. Bonney, 1117 Spruce St., Phila.*
1924. Dr. David J. Boon, 1532 N. 15th St., Phila.*

1931. Dr. Edward L. Bortz, 2021 W. Girard Ave., Phila.*
1921. Dr. Francis F. Borzell, 4940 Penn St., Phila.*
1936. Dr. Delazon Swift Bostwick, 106 Linwood Ave., Ardmore, Pa.§
1928. Dr. Albert E. Bothe, 133 S. 36th St., Phila.*
1928. Dr. Frederick A. Bothe, 133 S. 36th St., Phila.*
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1923. Dr. John O. Bower, 2008 Walnut St., Phila.*
1891. Dr. George M. Boyd, 1909 Spruce St., Phila.*
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1903. Dr. Thomas F. Branson, Rosemont, Pa.*
1917. Dr. Ralph S. Bromer, 629 Pembroke Road, Bryn Mawr, Pa.*
1936. Dr. Charles L. Brown, B.S., M.D., F.A.C.P., Professor of Medicine and Head of Dept. of Medicine, Temple University School of Medicine. Temple University Hospital, Broad and Ontario Sts., Phila.
1932. Dr. Claude P. Brown, 1930 Chestnut St., Phila.*
1919. Dr. Henry P. Brown, Jr., 1930 Chestnut St., Phila.*
1916. Dr. Samuel H. Brown, 1930 Chestnut St., Phila.*
1887. Dr. Albert P. Brubaker, 3426 Powelton Ave., Phila.*
1935. Dr. Mary Buchanan, 1737 Chestnut St., Phila.§
1930. Dr. Carl J. Bucher, The Westbury, 15th & Spruce Sts., Phila.*
1916. Dr. Albert C. Buckley, Friends Hospital, Frankford, Phila.*
1935. Dr. J. Nelson Burden, 4725 Osage Ave., Phila.
1928. Dr. Verne G. Burden, The Warwick, 17th and Locust Sts., Phila.*
1927. Dr. Michael A. Burns, N.E. Corner 20th and Chestnut Sts., Phila.†
1906. Dr. Stillwell C. Burns, 1238 Atwood Rd., Phila.*
1892. Dr. Charles W. Burr, 1527 Pine St., Phila.†
1906. Dr. Ralph Butler, 1930 Chestnut St., Phila.*

1934. Dr. B. Franklin Buzby, 414 Cooper St., Camden, N. J.†
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1936. Dr. Anthony Roland Camero, 4107 Chester Ave., Phila.§
1928. Dr. Edward H. Campbell, 1904 Spruce St., Phila.*
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1935. Dr. Lawrence S. Carey, 1 Cedar Lane, Highland Park, Pa.§
1931. Dr. Walter L. Cariss, 2043 Walnut St., Phila.*
1930. Dr. Chapin Carpenter, 1930 Chestnut St., Phila.†
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1895. Dr. John T. Carpenter, 1930 Chestnut St., Phila.*
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1933. Dr. W. Edward Chamberlain, Temple University Hospital, Phila.‡
1900. Dr. Burton Chance, 317 S. 15th St., Phila.*
1903. Dr. Walter Chrystie, Bryn Mawr, Pa.*
1929. Dr. Eliot R. Clark, 315 S. 41st St., Phila.*
1934. Dr. Jefferson Hamer Clark, 3701 N. Broad St., Phila.†
1926. Dr. J. Alexander Clarke, 334 S. 21st St., Phila.*
1926. Dr. Louis H. Clerf, 126 S. 10th St., Phila.*
1910. Dr. J. Howard Cloud, 11 W. Montgomery Ave., Ardmore, Pa.*
1903. Dr. George Morrison Coates, 1721 Pine St., Phila.†
1908. Dr. Charles A. E. Codman, S. E. Corner 42d and Spruce Sts., Phila.*
1922. Dr. Leon Solis-Cohen, 1923 Spruce St., Phila.*
1907. Dr. Myer Solis-Cohen, 2110 Spruce St., Phila.*
1888. Dr. S. Solis-Cohen, 1906 Walnut St., Phila.*
1920. Dr. Charles J. Cole, Elkins Park, Pa.*
1898. Dr. Stricker Coles, Bryn Mawr, Pa.*
1934. Dr. Robert C. Colgan, 5734 N. 5th St., Phila.†
1934. Dr. Leon H. Collins, Jr., 401 S. 50th St., Phila.†
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1911. Dr. Walter S. Cornell, 21st and Vine Sts., Phila.*
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1930. Dr. James E. Cottrell, 2031 Locust St., Phila.*
1924. Dr. Alfred Cowan, 1930 Chestnut St., Phila.*

1904. Dr. Frank A. Craig, Phipps Institute, 7th and Lombard Sts., Phila.*
1907. Dr. George S. Crampton, 2031 Locust St., Phila.*
1937. Dr. Martin P. Crane, B.S., M.D., Instructor in Medicine, Evans Dental School; Visiting Physician, Misericordia Hosptial. 2433 Germantown Ave., Phila.
1924. Dr. Baxter L. Crawford, Jefferson Hospital, 10th and Sansom Sts., Phila.*
1920. Dr. William J. Creighton, N. E. Cor. 20th and Chestnut Sts., Phila.*
1920. Dr. George H. Cross, Chester, Pa.*
1917. Dr. Sumner H. Cross, P. O. Box 126, Jenkintown, Pa.*
1921. Dr. Edward T. Crossan, 5324 Wayne Ave., Phila.*
1904. Dr. John M. Cruice, 406 S. 22d St., Phila.*
1902. Dr. Charles A. Currie, W. Walnut Lane, Germantown, Phila.*
1934. Dr. R. Philip Custer, 4035 Chestnut St., Phila.†
1887. Dr. Judson Daland, 317 S. 18th St., Phila.*
1919. Dr. John R. Davies, Jr., 2 E. Chestnut Ave., Chestnut Hill, Phila.*
1896. Dr. Charles N. Davis, 1931 Spruce St., Phila.*
1936. Dr. David M. Davis, B.S., M.D., Professor of Genito-Urinary Surgery, Jefferson Medical College; Attending Genito-Urinary Surgeon, Jefferson Medical College Hospital. 255 So. 17th St., Phila.
1916. Dr. Warren B. Davis, 135 S. 18th St., Phila.*
1900. Dr. Alexander H. Davisson, Rush Hospital, 33d St. and Lancaster Ave., Phila.*
1935. Dr. J. Montgomery Deaver, 1830 Delancey Pl., Phila.
1902. Dr. Howard Dehoney, 240 S. 13th St., Phila.*
1935. Dr. Irvin Elmer Deibert, 618 Benson St., Camden, N. J.§
1924. Dr. L. Waller Deichler, 1930 Chestnut St., Phila.*
1923. Dr. Perce De Long, N. E. Cor. 20th and Chestnut Sts., Phila.*
1928. Dr. A. Lovett Dewees, Times Medical Bldg., Ardmore, Pa.*
1924. Dr. Edward S. Dillon, 1803 Pine St., Phila.*
1932. Dr. Henry Dintenfass, 1305 Spruce St., Phila.*
1920. Dr. John Diven, 326 S. 19th St., Phila.*
1920. Dr. Joseph C. Doane, 19th and Spruce Sts., Phila.*

1933. Dr. Joseph C. Donnelly, 2008 Walnut St., Phila.‡
1907. Dr. George M. Dorrance, 2101 Spruce St., Phila.*
1902. Dr. Robert N. Downs, Jr., 6008 Greene St., Phila.*
1933. Dr. T. McKean Downs, Green Peace, Mt. Pleasant Road, Bryn Mawr, Pa.*
1910. Dr. William Drayton, Jr., 407 S. 22d St., Phila.*
1935. Dr. William Duane, Jr., 2100 Walnut St., Phila.
1935. Dr. Garfield G. Duncan, 1930 Chestnut St., Phila.
1937. Dr. Charles W. Dunn, Ph.G., M.D., Instructor in Medicine, Graduate School of Medicine, Univ. of Pa.; Endocrinologist, Phila. Orthopedic Hospital and Infirmary for Nervous Diseases, and Abington Memorial Hospital. 269 So. 19th St., Phila.
1935. Dr. John T. Eads, 1901 Walnut St., Phila.
1911. Dr. Henry C. Earnshaw, Bryn Mawr, Pa.*
1936. Dr. Mary Hoskins Easby, B.A., M.D., Associate in Cardiology, Graduate School of Medicine, Univ. of Pa.; Chief in Medicine and Chief of Cardiac Clinic, Woman's Hospital of Phila.; Clinical Associate, Dept. of the Heart, Presbyterian Hospital. 2123 Locust St., Phila.
1937. Dr. Joseph Edeiken, A.B., M.D., Fellow, Robinette Foundation, Univ. of Pa.; Instructor, School of Medicine, Univ. of Pa.; Cardiologist, Medical Service No. 1, Mt. Sinai Hospital. 1832 Spruce St., Phila.
1930. Dr. John Eiman, Cynwyd, Pa.*
1911. Dr. Eldridge L. Eliason, 326 S. 19th St., Phila.*
1928. Dr. Richard T. Ellison, 1614 Locust St., Phila.*
1936. Dr. J. Vernon Ellson, Medical Tower Bldg., 255 S. 17th St., Phila.§
1904. Dr. Walter Gray Elmer, 1801 Pine St., Phila.*
1934. Dr. William C. Ely, 3912 Chestnut St., Phila.†
1932. Dr. Gilson G. Engel, 1914 Pine St., Phila.*
1934. Dr. Louis D. Englerth, 5030 Oxford Ave., Frankford, Phila.†
1893. Dr. Augustus A. Eshner, 1019 Spruce St., Phila.*
1905. Dr. William Evans, 500 W. Gay St., West Chester, Pa.*
1912. Dr. Curtis C. Eves, 1910 Spruce St., Phila.*
1922. Dr. David L. Farley, 1725 Pine St., Phila.*
1903. Dr. Clifford B. Farr, Bryn Mawr, Pa.*
1893. Dr. William W. Farr, 121 Maplewood Ave., Germantown, Phila.*

1930. Dr. John T. Farrell, Jr., 235 S. 15th St., Phila.§
1935. Dr. L. Kraeer Ferguson, 133 S. 36th St., Phila.§
1936. Dr. Ferdinand Fetter, 322 S. 21st St., Phila.§
1935. Dr. Theodore R. Fetter, 255 S. 17th St., Phila.§
1924. Dr. Alexander G. Fewell, 1924 Pine St., Phila.*
1884. Dr. Henry M. Fisher, Jenkintown, Pa.*
1910. Dr. John Monroe Fisher, 345 S. 19th St., Phila.*
1928. Dr. Thomas Fitz-Hugh, Jr., 2016 Delancey St., Phila.*
1928. Dr. John B. Flick, 1608 Spruce St., Phila.*
1888. Dr. Lawrence F. Flick, 736 Pine St., Phila.*
1908. Dr. Collin Foulkrod, 3910 Chestnut St., Phila.*
1933. Dr. Kenneth Fowler, 51 N. 39th St., Phila.‡
1908. Dr. Herbert Fox, Pepper Laboratory, 36th and Spruce Sts., Phila.*
1906. Dr. Frederick Fraley, 71st and City Line, Overbrook, Pa.*
1935. Dr. John Edgar Fretz, Easton, Pa.§
1935. Dr. Cyrus Ward Fridy, A.M., M.D., 58th St. and Thomas Ave., Phila.
1933. Dr. James Scott Fritch, 269 S. 19th St., Phila.‡
1937. Dr. Herbert H. Fritz, A.B., M.D., Clinical Assistant in Surgery, Jefferson Hospital. Pennswood Rd. and Radnor St., Bryn Mawr, Pa.
1935. Dr. Wilfred Eyles Fry, 1819 Chestnut St., Phila.§
1937. Dr. Thomas F. Furlong, Jr., M.D., M.Sc. (Med.), Assistant Otolaryngologist, O. P. Dept., Bryn Mawr Hospital; Otolaryngologist and Chief of Dept. of Otolaryngology, Penna. School for the Deaf, Mt. Airy; Ass't Otolaryngologist, Graduate Hospital; Ass't Instructor in Oto-Rhinology, Graduate School of Medicine, Univ. of Pa. Times Medical Bldg., Ardmore, Pa.
1933. Dr. Clarence J. Gamble, 537 Allen's Lane, Phila.‡
1899. Dr. Robert G. Gamble, Haverford, Pa.*
1935. Dr. George Davis Gammon, 2124 Spruce St., Phila.§
1931. Dr. Vaughn C. Garner, Germantown Professional Building, Phila.*
1935. Dr. Donald C. Geist, 5302 Spruce St., Phila.§
1917. Dr. Arthur H. Gerhard, 1615 N. Delaware Ave., Phila.*
1899. Dr. John H. Gibbon, 1608 Spruce St., Phila.*
1934. Dr. John H. Gibbon, Jr., 1608 Spruce St., Phila.†
1933. Dr. U. Grant Gifford, Kennett Square, Pa.*
1920. Dr. A. Bruce Gill, 1930 Chestnut St., Phila.*

1931. Dr. Robert Louis Gilman, 1930 Chestnut St., Phila.†
1927. Dr. William R. Gilmour, 1737 Chestnut St., Phila.*
1931. Dr. Anthony A. S. Giordano, 1819 S. Broad St., Phila.*
1897. Dr. John H. Girvin, 2120 Walnut St., Phila.*
1920. Dr. Thomas S. Githens, The Cambridge, Wissahickon and School Lane, Phila.*
1906. Dr. John C. Gittings, University Hospital, Phila.§
1905. Dr. Ellis E. W. Given, 2714 Columbia Ave., Phila.*
1906. Dr. R. Max Goepp, 1201 Medical Arts Bldg., Phila.*
1906. Dr. Harold G. von Goldberg, 2213 Walnut St., Phila.*
1933. Dr. Harold Leon Goldburgh, 1932 Spruce St., Phila.‡
1935. Dr. N. Ralph Goldsmith, Medical Arts Bldg., Phila.§
1905. Dr. Alfred Gordon, 1900 Locust St., Phila.*
1928. Dr. Burgess L. Gordon, 1832 Spruce St., Phila.*
1894. Dr. Edwin E. Graham, 1713 Spruce St., Phila.*
1926. Dr. Francis C. Grant, 3400 Spruce St., Phila.*
1904. Dr. Charles P. Grayson, 262 S. 15th St., Phila.*
1933. Dr. Sigmund S. Greenbaum, 1714 Pine St., Phila.‡
1910. Dr. Milton J. Greenman, Wistar Institute, 36th St. and Woodland Ave., Phila.*
1932. Dr. George C. Griffith, 3833 Walnut St., Phila.*
1883. Dr. J. P. Crozer Griffith, 1810 Spruce St., Phila.*
1934. Dr. John Q. Griffith, Jr., 214 Glencoe Ave., Upper Darby, Pa.†
1912. Dr. J. Milton Griscom, Medical Tower, 255 S. 17th St., Phila.*
1933. Dr. Charles M. Gruber, Jefferson Medical College, Phila.‡
1932. Dr. Jacques P. Guequierre, Room 806, 1930 Chestnut St., Phila.*
1935. Dr. Samuel Bernard Hadden, 135 S. 36th St., Phila.§
1935. Dr. Harlan F. Haines, State and Hilltop Rds., Bywood, Pa.§
1894. Dr. S. McC. Hamill, 1822 Spruce St., Phila.*
1897. Dr. Alfred Hand, Jr., 1724 Pine St., Phila.*
1932. Dr. Stanley E. Harris, Lansdowne, Pa.*
1929. Dr. Francis G. Harrison, 1900 Spruce St., Phila.*
1933. Dr. William John Harrison, 135 S. 17th St., Phila.‡
1903. Dr. Charles D. Hart, 420 W. Mermaid Lane, Chestnut Hill, Phila.*
1926. Dr. Fred L. Hartmann, 1914 Pine St., Phila.*

1932. Dr. J. Calvin Hartman, 100 W. Walnut Lane, Phila.*
1935. Dr. Benjamin F. Haskell, 1426 Spruce St., Phila.§
1936. Dr. Lerleen Clement Hatch, M.D., Chief Resident Physician and Chief Medical Officer, Hospital Univ. of Pa. Univ. of Pa. Hospital, 36th and Spruce Sts., Phila.
1907. Dr. Charles J. Hatfield, Phipps Institute, 7th and Lombard Sts., Phila.*
1911. Dr. Charles R. Heed, 1205 Spruce St., Phila.*
1901. Dr. John C. Heisler, 3829 Walnut St., Phila.*
1903. Dr. J. Norman Henry, 1600 Arch St., Phila.*
1927. Dr. Leon Herman, 801 Medical Arts Bldg., Phila.*
1891. Dr. Addinell Hewson, 257 S. 16th St., Phila.*
1924. Dr. William Hewson, 6013 Greene St., Phila.*
1924. Dr. John C. Hirst, 2d, 500 N. 20th St., Phila.*
1905. Dr. E. B. Hodge, 2019 Spruce St., Phila.*
1931. Dr. H. Albert Holland, 8200 Crittenden St., Chestnut Hill, Phila.*
1933. Dr. Irving W. Hollingshead, 123 S. 18th St., Phila.*
1932. Dr. I. Pemberton P. Hollingsworth, 33 S. High St., West Chester, Pa.*
1919. Dr. Arthur H. Hopkins, 1726 Pine St., Phila.*
1925. Dr. R. Dale Hopkinson, Jenkintown, Pa.*
1928. Dr. Karl M. Houser, 2010 Spruce St., Phila.*
1908. Dr. Daniel M. Hoyt, Veterans' Bureau Hospital, St. Petersburg, Fla.*
1892. Dr. William E. Hughes, 3945 Chestnut St., Phila.*
1923. Dr. John E. Hume, N. E. Corner 20th and Chestnut Sts., Phila.*
1921. Dr. Robert J. Hunter, 2011 Chestnut St., Phila.*
1926. Dr. David N. Husik, 1930 Chestnut St., Phila.*
1934. Dr. Frank H. Hustead, 5112 N. Broad St., Phila.
1898. Dr. J. P. Hutchinson, Media, Pa.*
1935. Dr. Helen Ingleby, Woman's Medical College, East Falls, Phila.§
1921. Dr. Robert H. Ivy, 1930 Chestnut St., Phila.*
1917. Dr. Chevalier Jackson, 3432 N. Broad St., Phila.*
1932. Dr. Chevalier Lawrence Jackson, 3432 N. Broad St., Phila.*
1934. Dr. Maurice S. Jacobs, 1723 Pine St., Phila.†
1922. Dr. H. Leon Jameson, 2133 S. 16th St., Phila.*

1913. Dr. William H. Jefferys, Rosemont, Pa.*
1928. Dr. Rutherford L. John, 256 S. 21st St., Phila.*
1926. Dr. George Ernest Johnson, 5341 Chester Ave., Phila.*
1918. Dr. Leon Jonas, 255 S. 17th St., Phila.*
1924. Dr. Harold W. Jones, Room 901, 1930 Chestnut St., Phila.*
1900. Dr. Charles F. Judson, 1005 Spruce St., Phila.*
1902. Dr. Henry D. Jump, 2019 Walnut St., Phila.*
1936. Dr. Thomas M. Kain, 403 Cooper St., Camden, N. J.§
1903. Dr. F. J. Kalteyer, 1530 Locust St., Phila.*
1926. Dr. Isadore Kaufman, 1713 Pine St., Phila.*
1923. Dr. James Kay, 600 W. Olney Ave., Phila.*
1912. Dr. Floyd E. Keene, 133 S. 36th St., Phila.*
1913. Dr. Francis J. Kelly, 2211 Locust St., Phila.*
1935. Dr. George F. J. Kelly, N.E. cor. 20th and Chestnut Sts., Phila.§
1932. Dr. Herbert T. Kelly, 1900 Spruce St., Phila.*
1909. Dr. James A. Kelly, 1815 Spruce St., Phila.*
1912. Dr. Thomas C. Kelly, 105 School Lane, Phila.*
1921. Dr. Richard A. Kern, University Hospital, 36th and Spruce Sts., Phila.*
1935. Dr. Baldwin L. Keyes, 2025 Walnut St., Phila.§
1930. Dr. Robert A. Kimbrough, Jr., 807 Spruce St., Phila.*
1936. Dr. Orville C. King, Medical Arts Bldg., Phila.§
1931. Dr. Willard H. Kinney, 315 S. 17th St., Phila.*
1920. Dr. Joseph V. Klauder, 1934 Spruce St., Phila.*
1920. Dr. Thomas Klein, 250 S. 18th St., Phila.*
1934. Dr. Roland N. Klemmer, 439 N. Duke St., Lancaster, Pa.†
1934. Dr. Oram R. Kline, 414 Cooper St., Camden, N. J.†
1932. Dr. John W. Klopp, 618 W. Lehigh Ave., Phila.*
1919. Dr. Norman L. Knipe, 1930 Chestnut St., Phila.*
1908. Dr. Frank C. Knowles, 2035 Spruce St., Phila.*
1925. Dr. Harry E. Knox, 719 66th Ave., Oak Lane, Phila.*
1914. Dr. John A. Kolmer, Cynwyd, Pa.*
1936. Dr. Frank Williamson Konzelmann, 3638 N. 21st St., Phila.§
1932. Dr. Karl Kornblum, Wynnewood, Pa.*
1904. Dr. Frederick Krauss, Room 703, 1930 Chestnut St., Phila.*
1914. Dr. Edward B. Krumbhaar, Box 4310, Chestnut Hill, Phila.*

1900. Dr. Wilmer Krusen, Lansdowne, Pa.*
1932. Dr. Eugene M. Landis, University Hospital, 36th and Spruce Sts., Phila.*
1904. Dr. Henry R. M. Landis, Phipps Institute, 7th and Lombard Sts., Phila.*
1907. Dr. H. Maxwell Langdon, 1530 Locust St., Phila.*
1933. Dr. Roy L. Langdon, 5917 Greene St., Germantown, Phila.*
1934. Dr. Louis B. Laplace, 1900 Rittenhouse Sq., Phila.†
1926. Dr. George M. Laws, 1907 Spruce St., Phila.†
1936. Dr. William G. Leaman, M.D., Associate in Medicine, Woman's Medical College of Pa., in charge of Dept. of Cardiology; Physician-in-Charge Cardiac Clinic, Woman's College Hospital, Phila.; Physician-in-Charge Cardiac Clinic, Roxborough Memorial Hospital; Chief Cardiac Clinic, St. Luke's and Children's Hospital, Phila. 3700 Baring St., Phila.
1920. Dr. Frederic H. Leavitt, 1527 Pine St., Phila.*
1934. Dr. Thomas B. Lee, 622 Cooper St., Camden, N. J.†
1908. Dr. Walter E. Lee, 1833 Pine St., Phila.*
1936. Dr. Louis Lehrfeld, M.D., M.A., B.A., Attending Surgeon, Wills Hospital; Ophthalmologist, Phila. General Hospital; Secretary, Executive Committee, Medical Board, Phila. General Hospital. 1321 Spruce St., Phila.
1935. Dr. William T. Lemmon, 1930 Chestnut St., Phila.§
1920. Dr. Simon S. Leopold, 2025 Spruce St., Phila.*
1933. Dr. J. Walter Levering, 1309 Oak Lane, Phila.‡
1915. Dr. Fielding O. Lewis, 259 S. 17th St., Phila.*
1936. Dr. Walter I. Lillie, 3701 N. Broad St., Phila.§
1927. Dr. Walter H. Lindsey, 810 W. Dauphin St., Phila.*
1936. Dr. Charles Lintgen, M.D., 1930 Chestnut St., Phila.
1936. Dr. Thomas H. Llewellyn, A.B., M.D., Associate in Gynecology, Univ. of Pa. Medical School; Chief of Gynecological Dispensary, Univ. of Pa. Hospital. 739 No. 40th St., Phila.
1907. Dr. Edward Lodholz, Medical Laboratories, University of Pa., Phila.*
1931. Dr. S. A. Loewenberg, 1905 Spruce St., Phila.*
1933. Dr. Esmond Ray Long, Phipps Institute, 7th and Lombard Sts., Phila.‡
1935. Dr. William L. Long, 2025 Walnut St., Phila.§

1893. Dr. Daniel Longaker, 6050 Overbrook Ave., Phila.*
1931. Dr. Edwin P. Longaker, 41 E. Montgomery Ave., Ardmore, Pa.*
1936. Dr. Pascal F. Lucchesi, A.B., M.D., Supt., Phila. Hosp. for Contagious Diseases; Associate Dept. of Pediatrics, Temple University Medical School; Member American Academy of Pediatrics. Philadelphia Hospital for Contagious Diseases, 4000 N. Front St., Phila.
1921. Dr. Balduin H. E. Lucké, Medical School, University of Pa., Phila.*
1924. Dr. John B. Ludy, 1201 Medical Arts Bldg., Phila.*
1923. Dr. Charles W. Lueders, 1930 Chestnut St., Phila.*
1932. Dr. Francis D. W. Lukens, University Hospital, 36th and Spruce Sts., Phila.*
1930. Dr. Robert M. Lukens, 1923 Spruce St., Phila.†
1929. Dr. Clifford B. Lull, Women's Bldg., Penna. Hosp., 807 Spruce St., Phila.*
1919. Dr. Frank B. Lynch, Jr., Germantown Hospital, E. Wister St., Phila.†
1914. Dr. B. B. Vincent Lyon, 2031 Locust St., Phila.*
1933. Dr. Leo F. McAndrews, Times Medical Bldg., Ardmore, Pa.‡
1932. Dr. James F. McCahey, 1534 Pine St., Phila.*
1900. Dr. Daniel J. McCarthy, 2025 Walnut St., Phila.*
1936. Dr. Patrick A. McCarthy, Central Medical Bldg., Phila.§
1935. Dr. William U. McClenahan, 3 Summit Ave., Chestnut Hill, Phila.§
1931. Dr. Edward McCloskey, 7 E. Chestnut Ave., Chestnut Hill, Phila.*
1935. Dr. James W. McConnell, 20th and Chestnut Sts., Phila.§
1934. Dr. Grayson P. McCouch, Medical School, University of Pa., Phila.†
1895. Dr. Joseph McFarland, 542 W. Hortter St., Germantown, Phila.*
1931. Dr. Joseph McIver, 255 S. 17th St., Phila.§
1905. Dr. R. Tait McKenzie, 2014 Pine St., Phila.*
1933. Dr. James S. McLaughlin, 334 S. 21st St., Phila.*
1924. Dr. Thomas M. McMillan, 2044 Locust St., Phila.*

1924. Dr. F. Maurice McPhedran, Research Dept. of Respiratory Diseases, Germantown Hosp., Penn and Chew Sts., Phila.*

1932. Dr. Catharine Macfarlane, Medical Arts Bldg., Phila.*

1910. Dr. William H. Mackinney, 1930 Chestnut St., Phila.*

1936. Dr. Wm. J. MacMurtrie, M.D., Chief, Obstetrical Dept., Misericordia Hospital; Chief, Obstetrical Dept., Fitzgerald-Mercy Hospital. 912 S. 49th St., Phila.

1935. Dr. LeRoy M. A. Maeder, 204 S. 13th St., Phila.§

1935. Dr. Ernest G. Maier, 1323 N. 15th St., Phila.

1914. Dr. F. Hurst Maier, 2019 Walnut St., Phila.*

1936. Dr. Bernard Mann, M.D., Associate Professor Gynecology, Graduate School of Medicine, Univ. of Pa.; Gynecologist to Mt. Sinai Hospital; Gynecologist to Eagleville Sanitorium. 245 S. 16th St., Phila.

1937. Dr. Alexander Margolies, B.S., M.D., Associate in Medicine, Fellowship in the Robinette Foundation, School of Medicine, Univ. of Pa.; Associate Cardiologist and Adjunct Physician, Jewish Hospital. 1836 DeLancey St., Phila.

1889. Dr. Edward Martin, 135 S. 18th St., Phila.*

1935. Dr. James B. Mason, 3815 Chestnut St., Phila.§

1935. Dr. Robert A. Matthews, B.S., M.D., Associate in Psychiatry, Jefferson Medical College; Psychiatrist to Institute of Penna. Hosp.; Instructor in Neuro-anatomy, Jefferson Medical College; Visiting Psychiatrist, Phila. General Hosp. 111 N. 49th St., Phila.

1932. Dr. Richard H. Meade, Jr., 200 W. Mermaid Lane, Phila.†

1934. Dr. Paul M. Mecray, 405 Cooper St., Camden, N. J.†

1914. Dr. J. Bernhard Mencke, 1816 Spruce St., Phila.*

1923. Dr. Walter Mendelson, 639 Church Lane, Germantown, Phila.*

1894. Dr. D. J. Milton Miller, Pacific and California Aves., Atlantic City, N. J.*

1935. Dr. Ford A. Miller, 20 S. 39th St., Phila.§

1934. Dr. Hugh McC. Miller, 1614 Locust St., Phila.†

1932. Dr. M. Valentine Miller, 114 W. Phil-Ellena St., Phila.†

1921. Dr. T. Grier Miller, University Hospital, 36th and Spruce Sts., Phila.*

1904. Dr. Charles F. Mitchell, 2003 Pine St., Phila.*
1921. Dr. Henry K. Mohler, 319 S. 16th St., Phila.*
1932. Dr. Roy W. Mohler, 323 S. 20th St., Phila.*
1936. Dr. Hugh Montgomery, B.S., M.D., in charge of Peripheral Vascular Clinic, Hospital Univ. of Pa.; Junior Ward Chief, Instructor in Pharmacology, and Asst. Instructor in Medicine, Medical School, Univ. of Pa. 216 Kent Rd., Ardmore, Pa.
1936. Dr. John B. Montgomery, M.D., Associate in Gynecology, Jefferson Medical College; Ass't in Gynecology to Jefferson Medical College Hosp.; Ass't Obstetrician to Bryn Mawr Hospital; Ass't Gynecologist and Obstetrician to Phila. General Hosp. 1930 Chestnut St., Phila.
1932. Dr. Thaddeus L. Montgomery, 1930 Chestnut St., Phila.*
1928. Dr. Virgil H. Moon, Jefferson Medical College, Phila.*
1935. Dr. John Royal Moore, Beury Bldg., Broad St. and Erie Ave., Phila.§
1923. Dr. William F. Moore, 255 S. 16th St., Phila.*
1924. Dr. Stirling W. Moorhead, 1523 Pine St., Phila.*
1918. Dr. Arthur C. Morgan, 1930 Chestnut St., Phila.*
1936. Dr. David R. Morgan, Jefferson Medical College, Phila.§
1886. Dr. Caspar Morris, Haverford, Pa.*
1893. Dr. Elliston J. Morris, 128 S. 18th St., Phila.*
1929. Dr. Stuart Mudd, Dept. Bacteriology, Univ. of Penna., Phila.*
1935. Dr. Carroll Mullen, 7004 Hilltop Road, Bywood, Upper Darby, Pa.
1934. Dr. Edward A. Mullen, 2615 W. Somerset St., Phila.†
1905. Dr. George P. Muller, M.D., Professor of Surgery, Jefferson Medical College; Surgeon to the Jefferson, Misericordia and Lankenau Hospitals. 1930 Spruce St., Phila.
1930. Dr. Douglas P. Murphy, 1907 Spruce St., Phila.*
1934. Dr. Eugene C. Murphy, 1841 S. Broad St., Phila.†
1905. Dr. Louis H. Mutschler, 1625 Spruce St., Phila.*
1902. Dr. Charles F. Nassau, 1710 Locust St., Phila.*
1887. Dr. Thomas R. Neilson, 1937 Chestnut St., Phila.*
1936. Dr. Guy M. Nelson, 928 Clinton St., Phila.§
1905. Dr. William S. Newcomet, 3501 Baring St., Phila.*
1905. Dr. Arthur Newlin, 1804 Pine St., Phila.*
1935. Dr. Jesse Thompson Nicholson, 1726 Spruce St., Phila.§

1899. Dr. William Rufus Nicholson, 2023 Spruce St., Phila.†
1905. Dr. Charles C. Norris, 133 S. 36th St., Phila.*
1892. Dr. Richard C. Norris, Arlington, Vt.*
1933. Dr. Josef B. Nylin, University Hospital, Phila.‡
1913. Dr. Alexander Hay O'Neal, St. Davids, Pa.*
1936. Dr. Theodore Ernest Orr, 1930 Chestnut St., Phila.§
1913. Dr. George W. Outerbridge, 1927 Spruce St., Phila.*
1915. Dr. Hubley R. Owen, 319 S. 16th St., Phila.*
1897. Dr. Francis R. Packard, 304 S. 19th St., Phila.*
1933. Dr. Harold D. Palmer, 111 N. 49th St., Phila.‡
1906. Dr. Henry K. Pancoast, 544 S. Bowman Ave., Merion, Pa.*
1909. Dr. Benjamin D. Parish, 1927 Spruce St., Phila.*
1899. Dr. William E. Parke, 1534 N. 15th St., Phila.*
1910. Dr. Ross Vernet Patterson, 2126 Spruce St., Phila.§
1931. Dr. John Davis Paul, 3112 N. Broad St., Phila.*
1932. Dr. Franklin L. Payne, 133 S. 36th St., Phila.*
1922. Dr. P. S. Pelouze, 1737 Chestnut St., Phila.*
1909. Dr. Ralph Pemberton, Paoli, Pa.*
1930. Dr. Eugene P. Pendergrass, 428 Owen Rd., Ardmore, Pa.*
1932. Dr. Howard Y. Pennell, West Chester, Pa.*
1914. Dr. O. H. Perry Pepper, University Hospital, 36th and Spruce Sts., Phila.†
1902. Dr. William Pepper, School of Medicine, University of Penna., Phila.*
1916. Dr. Milton F. Percival, 2332 S. Broad St., Phila.*
1917. Dr. Luther C. Peter, 1930 Chestnut St., Phila.*
1905. Dr. George E. Pfahler, 1930 Chestnut St., Phila.*
1915. Dr. Damon B. Pfeiffer, 1822 Pine St., Phila.*
1907. Dr. George W. Pfromm, 1431 N. 15th St., Phila.*
1935. Dr. Arthur W. Phillips, 3904 Walnut St., Phila.§
1911. Dr. George Morris Piersol, 1913 Spruce St., Phila.*
1933. Dr. Donald Marion Pillsbury, 133 S. 36th St., Phila.‡
1905. Dr. Robert L. Pitfield, 5211 Wayne Ave., Phila.*
1922. Dr. Henry Pleasants, Jr., West Chester, Pa.*
1932. Dr. Roland De Lance Porter, Jenkintown, Pa.*
1931. Dr. Charles Allen Pryor, 1910 Spruce St., Phila.†
1931. Dr. Frank M. Ramsey, Chestnut Hill, Phila.*
1913. Dr. Alexander Randall, 1323 Medical Arts Bldg., Phila.*
1926. Dr. I. S. Ravdin, B.S., M.D., Harrison Professor of Surgery, School of Medicine and Assistant Professor of Re-

search Surgery, Graduate School of Medicine, University of Pennsylvania; Surgeon, University Hospital. 4623 Larchwood Ave., Phila.

1928. Dr. Warren S. Reese, 230 S. 21st St., Phila.*
1925. Dr. Rufus S. Reeves, 2227 Spruce St., Phila.*
1931. Dr. Robert P. Regester, 255 S. 17th St., Phila.*
1920. Dr. Martin E. Rehfuss, N. E. Corner 16th and Spruce Sts., Phila.*
1921. Dr. E. Paul Reiff, 5051 Chestnut St., Phila.*
1919. Dr. Stanley P. Reimann, 703 W. Phil-Ellena St., Germantown, Phila.*
1929. Dr. George S. de Rényi, 212 S. 39th St., Phila.*
1923. Dr. Sidney J. Repplier, Roumfort Road, Chestnut Hill, Phila.*
1936. Dr. James L. Richards, M.D., Attending Obstetrician and Gynecologist, Bryn Mawr Hospital; Assistant Gynecologist, Jefferson Hospital; Associate in Gynecology, Jefferson Medical College. 1930 Chestnut St., Phila.
1919. Dr. Russell Richardson, 320 S. 16th St., Phila.*
1919. Dr. Robert F. Ridpath, 1737 Chestnut St., Phila.*
1898. Dr. David Riesman, 1520 Spruce St., Phila.†
1936. Dr. Joseph A. Ritter, M.D., Pediatrician to Obstetrical Division, Phila. General Hosp.; Instructor in Pediatrics, Graduate School of Medicine, Univ. of Pa.; Physician-in-Charge of Children's Heart Clinic, Graduate School of Medicine, Univ. of Pa.; Pediatric Chief, St. Agnes Hospital. N.E. Cor. 54th and Gainor Rd., Phila.
1933. Dr. Damaso de Rivas, Lansdowne, Pa.‡
1932. Dr. Frederick R. Robbins, 258 S. 18th St., Phila.*
1899. Dr. Walter Roberts, 1921 Spruce St., Phila.*
1932. Dr. Harold F. Robertson, 327 S. 17th St., Phila.*
1903. Dr. William Egbert Robertson, 327 S. 17th St., Phila.*
1912. Dr. John Stewart Rodman, 524 Manor Rd., Wynnewood, Pa.*
1934. Dr. Harry L. Rogers, Riverton, N. J.†
1928. Dr. Edward Rose, 255 S. 17th St., Phila.*
1936. Dr. Elizabeth Kirk Rose, 426 Owen Road, Ardmore, Pa.§
1909. Dr. Randle C. Rosenberger, 1001 Walnut St., Phila.*
1932. Dr. Harry A. Rothrock, West Chester, Pa.*
1936. Dr. Norman Rothschild, 235 S. 15th St., Phila.§

1933. Dr. Leonard George Rowntree, The Barclay, 18th and Rittenhouse Sts., Phila.‡

1937. Dr. John B. Roxby, M.D., Professor of Anatomy, Histology and Embryology, Temple University School of Medicine; Professor of Anatomy, Phila. Dental College of Temple University; Visiting Physician, Chester Hospital. Dept. of Anatomy, Temple University, Broad and Ontario Sts., Phila.

1933. Dr. Jay Besson Rudolphy, M.D., Assistant Professor of Ophthalmology, Graduate School of Medicine, Associate in Ophthalmology, School of Medicine, University of Pennsylvania; Ophthalmologist and Chief of Out-Patient Clinic, Pennsylvania Hospital; Neuro-ophthalmologist, Philadelphia General Hospital. 1924 Pine St., Phila.

1905. Dr. J. Torrance Rugh, 911 Medical Arts Bldg., Phila.*

1929. Dr. William J. Ryan, Medical Arts Bldg., Phila.*

1936. Dr. Joseph Evans Sands, M.D., Rosemont, Pa.

1905. Dr. Paul J. Sartain, 2006 Walnut St., Phila.*

1908. Dr. Albert C. Sautter, Germantown Professional Bldg., Phila.*

1927. Dr. Gordon J. Saxon, 5314 Spruce St., Phila.*

1906. Dr. Edwin S. Saylor, 1737 Chestnut St., Phila.*

1920. Dr. Hunter W. Scarlett, 230 S. 21st St., Phila.*

1917. Dr. J. Parsons Schaeffer, 4634 Spruce St., Phila.*

1932. Dr. Howard W. Schaffer, 3475 Midvale Ave., Phila.*

1929. Dr. Lewis C. Scheffey, M.D., P.D., Associate Professor of Gynecology, Jefferson Medical College; Assistant Gynecologist, Jefferson Hospital. 255 S. 17th St., Phila.

1929. Dr. Harry P. Schenck, 1912 Spruce St., Phila.*

1917. Dr. Truman G. Schnabel, 1704 Pine St., Phila.*

1917. Dr. Charles H. Schoff, Media, Pa.*

1928. Dr. Frederick S. Schofield, 822 Medical Arts Bldg., Phila.*

1921. Dr. Edward A. Schumann, 1814 Spruce St., Phila.*

1887. Dr. George E. de Schweinitz, 1705 Walnut St., Phila.*

1930. Dr. John P. Scott, 1803 Pine St., Phila.*

1917. Dr. Charles A. Service, Bala, Pa.*

1924. Dr. Thomas A. Shallow, 3942 Chestnut St., Phila.*

1908. Dr. Charles E. G. Shannon, Room 1107, 1930 Chestnut St., Phila.*

1928. Dr. John S. Sharpe, Haverford, Pa.*
1928. Dr. Frederick C. Sharpless, Rosemont, Pa.*
1897. Dr. William T. Sharpless, West Chester, Pa.*
1931. Dr. William C. Sheehan, 8820 Germantown Ave., Phila.*
1932. Dr. Joyce T. Sheridan, 412 W. Durham St., Phila.*
1906. Dr. William G. Shields, 414 School Lane, Phila.*
1936. Dr. James Shelby Shipman, 542 Cooper St., Camden, N. J.§
1935. Dr. Robert Shoemaker, 3rd, 68 Byberry Rd., Hatboro, Pa.§
1896. Dr. William T. Shoemaker, 2017 Locust St., Phila.*
1900. Dr. Edward A. Shumway, 1737 Chestnut St., Phila.*
1936. Dr. Benjamin H. Shuster, 1824 Pine St., Phila.§
1903. Dr. John F. Sinclair, 4103 Walnut St., Phila.*
1907. Dr. Francis W. Sinkler, 1226 Medical Arts Bldg., Phila.*
1902. Dr. E. Hollingsworth Siter, 2213 De Lancey Place, Phila.*
1928. Dr. Samuel R. Skillern, 1734 Pine St., Phila.*
1933. Dr. Donald Campbell Smelzer, Graduate Hospital, Phila.‡
1929. Dr. Austin T. Smith, 259 S. 17th St., Phila.*
1933. Dr. Lauren H. Smith, 111 N. 49th St., Phila.‡
1936. Dr. Richard Manges Smith, 329 S. 12th St., Phila.§
1927. Dr. Calvin M. Smyth, Jr., Medical Arts Bldg., Phila.*
1919. Dr. Henry Field Smyth, Wayne, Pa.*
1935. Dr. Martin J. Sokoloff, 255 S. 17th St., Phila.§
1935. Dr. George N. J. Sommer, 120 W. State St., Trenton, N. J.
1933. Dr. Varnum C. Southworth, Germantown Professional Bldg., Phila.‡
1933. Dr. Edgar W. Spackman, Hamilton Court, 39th and Chestnut Sts., Phila.*†
1928. Dr. Edmund B. Spaeth, 1930 Chestnut St., Phila.*
1935. Dr. Ernest Spiegel, Majestic Hotel, Broad and Girard Ave., Phila.§
1897. Dr. William G. Spiller, 4409 Pine St., Phila.*
1929. Dr. Marshall B. Sponsler, 1934 Spruce St., Phila.*
1894. Dr. B. Franklin Stahl, Haverford, Pa.*
1909. Dr. J. Clinton Starbuck, 42 East Washington St., Media, Pa.*
1927. Dr. Isaac Starr, 505 Cresheim Valley Rd., Phila.*
1936. Dr. Edward Steinfield, N.E. Cor. 18th and Chestnut Sts., Phila.§

1895. Dr. Alfred Stengel, Maloney Clinic, University Hospital, 36th and Spruce Sts., Phila.*
1901. Dr. Arthur A. Stevens, 314 S. 16th St., Phila.*
1934. Dr. Harold L. Stewart, M.D., Assistant Professor of Pathology, Jefferson Medical College; Assistant Pathologist, Jefferson Hospital and Philadelphia General Hospital. Jefferson Medical College, Phila.
1914. Dr. Thomas S. Stewart, 1532 Pine St., Phila.*
1931. Dr. Merritt H. Stiles, 113 W. Chestnut Ave., Phila.*
1934. Dr. Cheney M. Stimson, Greene and Harvey Sts., Germantown, Phila.
1925. Dr. John H. Stokes, 3800 Chestnut St., Phila.*
1928. Dr. Joseph Stokes, Jr., 159 W. Coulter St., Phila.*
1934. Dr. Philip S. Stout, 269 S. 19th St., Phila.†
1923. Dr. Edward A. Strecker, 111 N. 49th St., Phila.*
1923. Dr. William D. Stroud, 1011 Clinton St., Phila.*
1933. Dr. Harry Stuckert, 248 S. 21st St., Phila.*
1937. Dr. Margaret Castex Sturgis, M.D., F.A.C.S., Clinical Professor of Gynecology, Woman's Medical College of Pa.; Gynecological Chief, Woman's Hospital of Phila.; Associate Gynecologist, Hospital of the Woman's Medical College of Pa.; Assistant Obstetrician and Gynecologist, Phila. General Hospital. 1930 Chestnut St., Phila.
1927. Dr. Samuel B. Sturgis, Ardmore, Pa.*
1934. Dr. Thomas J. Summey, 1930 Chestnut St., Phila.†
1930. Dr. F. William Sunderman, 2210 Delancey St., Phila.*
1936. Dr. James Miller Surver, 1832 Spruce St., Phila.§
1928. Dr. William B. Swartley, 6002 Greene St., Phila.*
1934. Dr. John A. Sweeney, 1900 Rittenhouse Sq., Phila.†
1900. Dr. James Ely Talley, 1811 Spruce St., Phila.*
1933. Dr. Herbert W. Taylor, Haverford, Pa.‡
1931. Dr. Norman H. Taylor, 100 W. Evergreen Ave., Phila.*
1928. Dr. J. Earl Thomas, Drexel Hill, Pa.*
1907. Dr. T. Turner Thomas, 1737 Chestnut St., Phila.*
1927. Dr. J. Monroe Thorington, 2031 Chestnut St., Phila.*
1898. Dr. Edward Q. Thornton, 1331 Pine St., Phila.*
1936. Dr. Mary Bickings-Thornton, M.D., Professor of Anatomy, Woman's Medical College; Lecturer Anatomy, Physiology, School Occupational Therapy; Lecturer Hygiene, Woman's Medical College. 2703 West Somerset St., Phila.

1936. Dr. Francis Quicksall Thorp, 1367 Oxford St., Phila.§
1930. Dr. Edward S. Thorpe, Jr., 133 S. 36th St., Phila.*
1936. Dr. William J. Thudium, Medical Arts Bldg., Phila.§
1935. Dr. L. M. Tocantins, 350 E. Meehan Ave., Phila.
1935. Dr. Owen J. Toland, 323 S. 20th St., Phila.§
1912. Dr. Robert G. Torrey, 1716 Locust St., Phila.*
1936. Dr. Charles Emory Towson, A.B., B.S., M.D., F.A.C.S., Demonstrator in Otology, Jefferson Medical School; Chief Clinical Assistant in Otology, Jefferson Hospital; Otolaryngologist, Germantown Hospital. Germantown Professional Bldg., Greene and Coulter Sts., Phila.
1934. Dr. Martha Tracy, 516 W. Coulter St., Phila.†
1908. Dr. Stephen E. Tracy, 1930 Chestnut St., Phila.*
1926. Dr. Gabriel Tucker, 326 S. 19th St., Phila.§
1933. Dr. Henry J. Tumen, 2022 Spruce St., Phila.‡
1935. Dr. William G. Turnbull, Phila. General Hospital, Phila.§
1923. Dr. Creighton H. Turner, 1731 Pine St., Phila.*
1929. Dr. Ralph M. Tyson, 334 S. 21st St., Phila.*
1937. Dr. Charles A. W. Uhle, A.B., M.D., Associate in Urology, Medical School, Univ. of Pa.; Ass't Urologist, Lankenau Hospital; Ass't Genito-Urinary Surgeon, Phila. General Hospital. 7939 Winston Road, Phila.
1907. Dr. Josephus T. Ullom, Carpenter and Quincy Sts., Phila.*
1934. Dr. George A. Ulrich, 309 S. 12th St., Phila.†
1937. Dr. Emily Lois Van Loon, A.B., M.D., M.Sc. (Med.), F.A.C.S., Professor of Oto-Laryngology, Woman's Medical College of Pa.; Oto-Laryngologist, Woman's Hospital of Phila.; Associate Professor of Bronchoscopy, Temple University School of Medicine. 1930 Chestnut St., Phila.
1933. Dr. Jacob Hursh Vastine, 1930 Chestnut St., Phila.‡
1912. Dr. Norris Wistar Vaux, 807 Spruce St., Phila.*
1903. Dr. William S. Wadsworth, 3914 Baltimore Ave., Phila.*
1927. Dr. Arthur J. Wagers, 1429 Spruce St., Phila.*
1928. Dr. George W. Wagoner, Haverford Gables, Haverford, Pa.*
1931. Dr. Herschel C. Walker, Wynnewood, Pa.*
1906. Dr. John K. Walker, Media, Pa.§
1907. Dr. Warren Walker, 1819 Chestnut St., Phila.*

1932. Dr. Adolph A. Walkling, M.D., Assistant Surgeon, Jefferson Hospital; Assistant Professor of Surgery, Jefferson Medical College; Assistant Surgeon, Pennsylvania Hospital. Medical Arts Bldg., Phila.
1904. Dr. Joseph Walsh, 521 Medical Arts Bldg., Phila.*
1895. Dr. Arthur W. Watson, 2013 Locust St., Phila.*
1923. Dr. William R. Watson, 2300 Pine St., Phila.*
1932. Dr. Charles C. Watt, Jr., 6605 Wayne Ave., Phila.*
1933. Dr. James Jamison Waygood, 3464 W. School Lane, Phila.‡
1903. Dr. Charles H. Weber, 2048 Pine St., Phila.*
1930. Dr. S. Dana Weeder, 6110 Greene St., Phila.*
1920. Dr. Fred D. Weidman, 20 Tenby Road, Llanerch, Pa.*
1933. Dr. Benjamin Paul Weiss, The Lenox, 13th and Spruce Sts., Phila.‡
1923. Dr. Edward Weiss, M.D., Professor of Clinical Medicine, Temple University School of Medicine. 1923 Spruce St., Phila.
1935. Dr. George L. Whelan, 2100 Walnut St., Phila.§
1921. Dr. William Whitaker, 5448 Germantown Ave., Phila.*
1901. Dr. Courtland Y. White, 6611 N. 10th St., Phila.*
1936. Dr. Ellen Pawling Corson-White, B.A., M.D., Pathologist at Phila. Orthopaedic Hospital and Infirmary for Nervous Diseases; Director of Laboratory, Phila. Municipal Court. 1820 Pine St., Phila.
1925. Dr. Bernard P. Widmann, 250 S. 18th St., Phila.*
1936. Dr. Theodore S. Wilder, A.B., M.D., Associate in Pediatrics, Univ. of Pa.; Chief, St. Christopher's Hospital for Children; Visiting Pediatrist, Abington Memorial Hospital; Chief of Service C, Germantown Hospital. Germantown Professional Bldg., Greene and Coulter Sts., Phila.
1936. Dr. R. Powers Wilkinson, Ph.G., M.D., Physician to Moyamensing Prison; Treasurer, Phila. County Medical Society. 1613 S. Broad St., Phila.
1914. Dr. De Forest P. Willard, 1726 Spruce St., Phila.*
1935. Dr. John H. Willard, 250 S. 18th St., Phila.
1907. Dr. Carl Williams, School Lane and Greene St., Phila.*
1924. Dr. Horace J. Williams, 5908 Greene St., Phila.*
1937. Dr. John C. Williams, M.D., Assistant Pediatrician, Germantown Hospital. 6370 Germantown Ave., Phila.

1920. Dr. Philip F. Williams, 2206 Locust St., Phila.*
1927. Dr. Ernest G. Williamson, 6353 Woodbine Ave., Phila.*
1916. Dr. Harry B. Wilmer, 6013 Greene St., Phila.*
1921. Dr. George Wilson, 133 S. 36th St., Phila.*
1937. Dr. Ross B. Wilson, A.B., M.A., M.D., Assistant Obstetrician and Gynecologist, Penna. Hospital; Ass't Obstetrician and Gynecologist, Phila. General Hospital; Ass't Obstetrician, Lankenau Hospital; Ass't Instructor in Obstetrics, Univ. of Pa. 1914 Pine St., Phila.
1902. Dr. Samuel M. Wilson, 1930 Chestnut St., Phila.*
1897. Dr. W. Reynolds Wilson, Villa Nova, Pa.*
1936. Dr. James M. Winfield, A.B., M.D., F.A.C.S., Instructor in Surgery, Medical School, Univ. of Pa. 1015 Washington St., Wilmington, Del.
1904. Dr. James W. Wister, 5430 Germantown Ave., Phila.*
1933. Dr. Michael G. Wohl, 1727 Pine St., Phila.‡
1918. Dr. Charles C. Wolferth, S. E. Corner 36th and Spruce Sts., Phila.*
1893. Dr. Alfred C. Wood, 2035 Walnut St., Phila.*
1932. Dr. Francis C. Wood, Wynnewood, Pa.*
1900. Dr. George B. Wood, N. E. Corner 20th and Chestnut Sts., Phila.*
1903. Dr. Horatio C. Wood, 319 S. 41st St., Phila.*
1897. Dr. George Woodward, W. Willow Grove Ave., Chestnut Hill, Phila.*
1928. Dr. Carroll S. Wright, 1402 Spruce St., Phila.*
1894. Dr. William Zentmayer, Room 803, 1930 Chestnut St., Phila.*
1895. Dr. Mason W. Zimmerman, 1518 Waverly St., Phila.*
1933. Dr. Jay D. Zulick, 2008 Walnut St., Phila.‡

NON-RESIDENT FELLOWS

* For degrees and titles see TRANS., 1932, LIV, xi.
† For degrees and titles see TRANS., 1934, II, No. 3, liii.
§ For degrees and titles see TRANS., 1935, III, No. 2, lvi.

ELECTED

1883. DR. CHARLES BAUM, 123 W. Main St., Middletown, Pa.*
1916. REAR ADMIRAL WILLIAM H. BELL, M.C., U.S.N., 5 W. Blackthorn St., Chevy Chase, Md.*
1903. DR. M. H. BIGGS, Rutherfordton, N. C.*
1936. DR. CLARK EDWARD BROWN, B.S., M.D., Lucius Littauer Fellow, Harvard College. Collis P. Huntington Memorial Hospital, Boston, Mass.
1908. DR. WILLIAM W. CADBURY, Lingnan University, Canton, China.*
1936. DR. FRANCIS MANN CLARKE, 116 New St., New Brunswick, N. J.§
1936. DR. MELBOURNE J. COOPER, M.D., University Staff, Santa Rosa Hospital; Nix-Memorial Hospital; Medical and Surgical Hospital, San Antonio, Texas. Nix Professional Bldg., San Antonio, Texas.
1910. DR. W. TAYLOR CUMMINS, 975 Bush St., San Francisco, Cal.*
1936. DR. JOHN MCCREA DICKSON, M.S., M.D., Sc.D., F.A.C.S., Chief Surgeon, Annie M. Warner Memorial County Hospital, Gettysburg. 103 W. Middle St., Gettysburg, Pa.
1897. DR. W. A. N. DORLAND, 185 N. Wabash Ave., Chicago, Ill.*
1905. DR. JOSEPH S. EVANS, JR., 1300 University Ave., Madison, Wis.*
1913. DR. NATHANIEL GATES, 10 Peterboro Ave., Detroit, Mich.*
1908. DR. EDWARD H. GOODMAN, Dorset, Vt.*
1936. DR. DONALD GUTHRIE, Robert Packer Hospital, Sayre, Pa.§
1902. DR. NORMAN B. GWYN, 109 Madison Ave., Toronto, Canada.*
1928. DR. JOSEPH M. HAYMAN, Lakeside Hospital, Cleveland, O.*
1935. DR. EMORY HILL, Professional Bldg., Richmond, Va.§
1892. DR. GUY HINSDALE, White Sulphur Springs, W. Va.*
1908. DR. A. PARKER HITCHENS, Major M.C., U.S.A., in charge 6th Corps Area Laboratory, Ft. Sheridan, Ill.*

1933. Dr. Lewis H. Hitzrot, A.B., M.D., Medical Director, Mercersburg Academy, Mercersburg, Pa.
1936. Dr. Brady A. Hughes, B.S., M.D., Medical Director, American Oncologic Hospital, Phila., Pa. (1929–1936). 5005 42nd Place, North; Birmingham, Ala.
1912. Dr. John W. Hunter, McDaniel, Md.*
1885. Dr. Edward Jackson, Republic Bldg., Denver, Colo.*
1900. Dr. John H. Jopson, Waverly Mills, S. Car.*
1910. Dr. Howard T. Karsner, Institute of Pathology, Western Reserve University, Cleveland, Ohio.*
1887. Dr. Howard A. Kelly, 1418 Eutaw Place, Baltimore, Md.*
1935. Dr. Hunter H. McGuire, 105 N. Braddock St., Winchester, Va.§
1916. Dr. Howard A. McKnight, Tecumseh Bldg., Springfield, Ohio.*
1900. Dr. Robert Phillips McReynolds, 213 S. Broadway, Los Angeles, Cal.*
1911. Dr. Edward B. Meigs, 1736 M St., N. W., Washington, D. C.*
1936. Dr. William Shainline Middleton, Univ. of Wisconsin, Madison, Wis.§
1917. Dr. A. Graeme Mitchell, University of Cincinnati, Cincinnati, Ohio.*
1915. Dr. John H. Musser, 1430 Tulane Ave., New Orleans, La.§
1937. Dr. Samuel T. Nicholson, 2nd, A.B., M.D., Consultant Staff, Pottstown Hospital, Pottstown, Pa.; Medical Director of Clinical and Preventive Medicine, The Hill School, Pottstown, Pa. The Hill School, Pottstown, Pa.
1905. Dr. George W. Norris, Dimock, Pa.*
1901. Dr. Henry Norris, Waverly Mills, S. C.*
1926. Dr. John Rodman Paul, Dept. Internal Medicine, Yale University, New Haven, Conn.*
1907. Dr. George E. Price, Stimson Bldg., Seattle, Wash.*
1936. Dr. James J. Quiney, 309 Bushkill St., Easton, Pa.§
1904. Dr. M. P. Ravenel, 203 Westmount Ave., Columbia, Mo.*
1936. Dr. John A. Resinger, A.B., M.D., Specialist, Cardio-Vascular Diseases, United States Veterans Administration. 1900 Lamont St., N.W., Washington, D. C.
1907. Dr. B. Franklin Royer, 11 Wyoming Ave., Tunkhannock, Pa.*

1913. Dr. George L. de Schweinitz, 85 East Broad St., Bethlehem, Pa.*
1908. Dr. Harlan Shoemaker, 1930 Wilshire Blvd., Los Angeles, Cal.*
1932. Dr. Alvin E. Siegel, 609 Georgia Casualty Bldg., Macon, Ga.*
1934. Dr. Sloan G. Stewart, Pacific and N. Carolina Aves., Atlantic City, N. J.
1900. Dr. John M. Swan, 457 Park Ave., Rochester, N. Y.*
1913. Dr. William Penn Vail, Blairstown, N. J.*
1897. Dr. Clarence A. Veasey, Suite 1569, Paulson Bldg., Spokane, Wash.*

HONORARY FELLOWS

(Limited to Fifty, of whom Twenty may be Foreigners)

American

ELECTED

1909. Crile, George W., M.D., Cleveland Clinic, Euclid Ave. at E. Ninety-third St., Cleveland, O.

1916. Estes, William Lawrence, M.D., 805 Delaware Ave., Bethlehem, Pa.

1912. McCaw, Brig.-Gen. Walter D., M.D., Assistant Surgeon-General, U. S. A., retired, Woodstock, Ulster Co., N. Y.

1906. Mayo, William J., M.D., Rochester, Minn.

1917. Miner, Charles H., M.D., 264 S. Franklin St., Wilkes-Barre, Pa.

1936. Richards, Alfred Newton, Ph.D., Sc.D., M.D. (Hon.), School of Medicine, University of Penna., Phila., Pa.

Foreign

1928. Archibald, Edward, M.D., McGill University, Montreal, Canada.

1924. Hopkins, Sir F. Gowland, M.D., Biochemical Department, University of Cambridge, Cambridge, England.

1922. McCarrison, Sir Robert, Kt. C.I.E., M.D., D.Sc., LL.D., F.R.C.P., Major-General Indian Medical Service (retired).. 18 Linton Road, Oxford, England.

1906. Myles, Sir Thomas, M.D., 33 Merion Square, W. Dublin, Ireland.

1885. Rendu, Jean, M.D., Lyons, France.

1928. Rolleston, Sir Humphrey, Bart., G.C.V.O., K.C.B., M.D., D.C.L. (Durh.), LL.D., D.Sc., Martins, Haslemere, Surrey, England.

NECROLOGICAL LIST

Honorary Fellows

DR. LEWIS STEPHEN PILCHER	December	24, 1934
DR. JOHN JAMES McLEOD	March	16, 1935

Fellows

DR. WILLIAM J. TAYLOR	January	22, 1936
DR. McCLUNEY RADCLIFFE	February	28, 1936
DR. THEODORE LEBOUTILLIER	March	4, 1936
DR. WILLIAM TURNER VAN PELT	April	26, 1936
DR. HENRY K. DILLARD	May	19, 1936
DR. CLARENCE A. PATTEN	June	2, 1936
DR. JOSEPH PRICE TUNIS	June	10, 1936
DR. HORACE PHILLIPS	July	24, 1936
DR. CHARLES H. FRAZIER	July	26, 1936
DR. EUGENE LINDAUER	July	29, 1936
DR. THOMAS B. HOLLOWAY	August	18, 1936
DR. JAMES M. ANDERS	August	28, 1936
DR. EDWARD J. KLOPP	September	19, 1936
DR. ARTHUR VAN HARLINGEN	September	23, 1936
DR. WILLIS F. MANGES	November	25, 1936
DR. P. FRAILEY WELLS	December	16, 1936

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